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A TREATISE  
ON  
IRRITATION OF THE SPINAL NERVES  
AS THE SOURCE OF  
NERVOUSNESS, INDIGESTION,  
FUNCTIONAL AND ORGANICAL DERANGEMENTS  
OF THE  
PRINCIPAL ORGANS OF THE BODY,  
AND ON THE MODIFYING  
INFLUENCE OF TEMPERAMENT AND HABITS  
OF MAN OVER DISEASES,  
AND THEIR IMPORTANCE AS REGARDS CONDUCTING SUCCESSFULLY  
THE TREATMENT OF THE LATTER;  
AND ON THE  
THERAPEUTIC USE OF WATER.

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## INTRODUCTION.

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IT has been my custom to transcribe the symptoms of interesting medical cases into my note-book, and making remarks after each visit to the patient, in order that I might compare them with cases bearing characteristic similitude, described by authors of standard medical works.

The perusal of the history of cases of Spinal Irritation, superintended and written during a

quarter of a century, with observations on the effect of remedies, will, I presume, be useful to other practitioners; since they have formed for me a fund for continual study, which often led me to make useful deductions that did not occur whilst superintending and writing the case.

The great advantage derived from the practice of noting medical cases, induces me strongly to recommend the custom to the junior members of the profession. But whether I shall be tolerated in presenting to the public, the result of my habit, and practical observations, it is not for me to determine. The critic, I am sure, will appreciate the difficulties with which the subjects I have allotted for this work are surrounded; and since I have failed to satisfy myself in elucidating the abstruse subjects of Nervous and Spinal Irritation, I have no right to expect that others will be satisfied. I therefore must content myself with being numbered



among authors who have attempted the elucidation of Nervous Affections, and found them too intricate to accomplish.

If I have succeeded in pointing out to my professional brethren a more certain and speedy mode than has hitherto been adopted to alleviate the physical and moral sufferings of the Nervously afflicted and other patients, my hopes and wishes will be amply rewarded. Be the result what it may, I trust that the facts and views I have noticed will aid and assist some other more successful aspirant, in the same manner as I have been assisted from the accumulated mass of writings of previous authors, who have ascertained and pointed out certain principles, which command general assent.

The knowledge, however, of medicine may be admitted, up to the present time, to consist chiefly, and almost entirely, of a collection of individual observations, upon cases systematically arranged,

from which, useful rules, confirmed by experience, have been deduced for practical purposes. But it is to be regretted that much of the materials out of which so many more might be obtained, lie unarranged, and comparatively valueless; and it is yet more to be regretted, that, for want of a careful transmission to posterity, many important facts and cases have been allowed to fade on the memory, and finally be lost in obscurity of time.

Indeed, it must be allowed, that we are not yet in the possession of scientific proofs, or analytical demonstrations of these rules, so that we may reduce them to first and general principles; our induction for ascertaining their reality and occasional application, cannot be derived from arguments of sufficiently established theory; and consequently such rules hitherto have had no scientific, but merely a technical value and character.

Notwithstanding the defects of medical science,



still the recorded history of every age is admirable, and amply supplies proofs of its continual improvement, by the persevering industry of its devoted cultivators, more especially during the last fifty or sixty years, nay, within the last five and twenty years, we may discover a cogent and constant desire in their writings, to reduce the phenomena of organized animal bodies to general principles; and, in the most philosophic manner, explain them by scientific deduction, in order to perfect the Science of Medicine.

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*Harley Street, London.*





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# A TREATISE

ON

## IRRITATION OF THE SPINAL CORD,

*&c. &c.*

---

### CHAPTER I.

THERE are few classes of disease presenting a greater number of points of pathological obscurity and interest to the members of the profession, than the multifarious afflictions which are vaguely denominated neuralgic and nervous affections; and more particularly since they appear to progress with the intellectual refinement of civilization.

Indefinitely attributing effects to their causes, can in no human ailment be of greater importance than in nervous diseases, since they simulate inflammatory action in every organ, leading to an error in diagnosis, and serious consequences of treating one for the other.

I sincerely believe, that by associating a minute knowledge of the anatomical distribution and connection of the spinal nerve, with those of the brain, forming in a normal state a ring of nervous influence, to supply every organ of the body with power to perform its indi-

vidual function, necessary as part of the whole, for the continuance of health, and life, will enable us to explain the cause, and thereby even cure a vast class of nervous diseases which have hitherto been intractable enough to be deservedly ranked among the *opprobria medicorum*.

Although these affections, originating in the spinal column, exhibit great diversity of symptoms, and have the power to modify the condition of many other organs and their diseases, still experience has pointed out rules to detect the original causes that are capable of influencing morbidly the nervous system generally and locally, without exciting an increase of general or local vascular action, and other physical signs of inflammatory diseases.

The pathology of nervous affections has confessedly received considerable elucidation of late from the spirit of medical investigation, that peculiarly characterizes this age, and particularly by the highly important results which have followed the brilliant discoveries of Sir Charles Bell, Magendie, and others, on the functions of the spinal nerves, which have thrown so much light on many points connected with the nervous system; consequently a greater degree of attention has been directed to special nervous disorders,—and hence the press has been teeming with promulgated opinions, and explanations of their phenomena, both in this country and abroad; so that much has been, and is daily doing, towards perfecting our knowledge and distinguishing spinal pathology from erroneous theories.

The spinal marrow, and the roots of its nerves, like the brain, are enclosed in a strong bony case, showing

that the Omniscient Creator regarded their protection from injury, together with their ganglions to be of the utmost importance for the welfare of the being. It is in these ganglions, that the nervous influence of every part of the brain, and spinal marrow combine, and hence convey nervous energy to the vital organs, in order that the secreting and assimilating organs may perform their functions. Thus all are rendered dependent upon one another to continue the life and health of the being.

Some anatomists have considered that the twenty-four bones and joints forming the spinal column, and the canal for enclosing the medulla spinalis and its membranes is too strongly fixed together to be dislocated, or to receive impression of external or physical agents; but experience has amply proved the fallacy of this opinion; for the whole are liable to the same accidents and diseases as the brain, and all the bones and joints of the frame.

The spinal column then consists of twenty-four bones, and joints, subdivided. The cervical or neck, consists of seven flexible vertebræ, the dorsal or back, of twelve, and the lumber or loins, of five; from each of these bones, on the right and left side, issues a pair of nerves, and from the sacrum in the like manner, five more pass out, making in all twenty-nine pairs, or fifty-eight nerves originating in the spinal marrow, and diverging through their respective channels in the vertebræ to nearly every organ constituting the body, and certainly directly or indirectly controlling the functions of the whole. Thus by their means the action of swallowing and the functions of secretion and excretion are preformed,



and the regulation of the circulation of the chyme, chyle, and blood; also the muscular energy and sensation of the trunk and extremities, and most other important functions: for none of the cerebral or brain nerves, with the exception of the eighth pair, and the great sympathetic, descend below the throat. Undoubtedly the cerebral nerves are principally for the purpose of conveying impressions to the *sensorium commune*, and transmit the determination of the will to the muscles of voluntary motion, whilst the action of the involuntary muscles, as those of the heart and of the respiratory organs are performed by the nerves of the spinal cord, which seems to be proved by the experiment of decapitating a warm-blooded animal, and on respiration being artificially kept up, it will live for many hours, but will instantly die either before or after decapitation, when the spinal marrow is divided and destroyed. This experiment tends to lead us to conceive that the nerves of the brain and spinal marrow perform distinct functions; but later physiological experiments rather show that they are only intimately connected, and that the cerebral nerves control the spinal cord.

When the spinal nerves are morbidly irritated from any cause, they prove prolific sources of disease, producing the same state of the system, as affection of the nerves of the brain does; for the functions of the assimilating organs require the influence of the whole brain and spinal marrow through the ganglionic system of nerves; and if any organ is deficiently supplied with nervous energy or of blood, its functions immediately, and sooner or later its structure, become deranged; there-

fore, it is in vain to attempt to restore the digestive organs: for example, by means directed to them alone, when the cause of failure is in a distant part;—consequently, we must try to give vigour to the central parts of the nervous system, in which the immediate causes exist. Instead, therefore, of drenching the poor stomach always with medicines, and teasing it with food for which it has no desire, according to the fancy of the medical attendant, or the fashion of the day, we may aid the return of its healthy functions by various collateral means, which we shall hereafter point out, enlisting into the service voltaic electricity in those cases arising from a defect of nervous power, particularly in habitual asthma and indigestion.

After ample experience, I am well assured that both in disease of the spinal marrow, and in remote organs, as consequences thereof, and in certain cases of general nervous debility, voltaic electricity will often succeed where all other means had failed. In cases depending upon deficient nervous energy, voltaic electricity is capable of exciting the spinal marrow benignly, and thereby aiding to restore the healthy functions of the assimilating organs and to improve the general health of the patient, and again thereby indirectly the original source of the disease in the spine.

Hippocrates and Galen, more than two thousand years ago, noticed in their writings that parts lose their feeling, while motion remains entire, and that at other times motion is destroyed, leaving the sensibility unimpaired. Spinal irritation has been ever since observed by practitioners, who have recorded and confirmed the opinion

that morbid condition of the spinal nerves constitutes one of the most important and complicated affections of the nervous system, varying endlessly in form and degree. This, however, was not attempted to be explained upon anatomical principles until Rufus, the Ephesian, distinguished himself in the first Christian century by his endeavours in that manner to explain them, and from his time nothing was in that way effected until Sir Charles Bell and Magendie proved that the spinal marrow was the seat of sensation and motion, developed in its spinal nerves; of late years, it has also been known that disease was communicated directly or indirectly from their origin to their extremity, or from the latter to the former, but confessedly limited to a very few practitioners, who were by the fact guided in their treatment of medical or surgical cases, notwithstanding their anatomical education had taught them that spinal nerves were distributed to all the vital organs contained in the thorax, abdomen, and pelvis, to supply them with nervous energy necessary for every function for the continuance of life, and every muscular action of the frame. The intimate connexion of the spinal nerves with those of the brain, through the ramification of the great sympathetic nerve and *parvagum* render the symptoms of spinal irritation still complex and difficult to explain upon anatomical principles. Confessedly many symptoms occur, that, as yet, it has failed to explain; but by the uniformity of the symptoms arising in connexion with certain portions of the spine, and certain organs, our deductions are safely formed, rather than upon our power of tracing the nerv-



ous connexion of some of the remote organs from the spine.

When we reflect on the fact, that every organ and muscle in the body is connected and dependent more or less upon the spinal nerves, for the perfect performance of their individual functions—we cannot be otherwise than prepared to hear of a lengthened catalogue of maladies which are either engendered, continued, or the consequence of either spinal irritation, inflammation, with or without curvatures, or caries of the spinal column—a class of disease of no small importance, whether we regard their frequency or the suffering and danger which attend them, the nature of which, in consequence of our erroneous views of the animal economy, has been overlooked, and the sufferer thus deprived of all chance of effectual assistance from our art.

The following few names of eminent authors, I have selected out of a very long list of ancient and modern authors, including Hippocrates, Galen, Celsus and Rufus; Avicenna, Lieutaud, Morgagni, Ollivier, Martinet, Pott, Earle, Shaw, Wilson, Lloyd, Rust, Bampffield, Abernethy, Brodie, Boyer, Scarpa, Delpech, Harrison, Dods, Chessher, Baynton, Bichat, Dupuytren, Copeland, Brown, Bell, Bright, Hall, Bennett, Guerin, Philip, Serny, Teale, Laycock, Ludwig, Frank, Entz, Billing, &c. &c. Dr. Billing says in Chap. cxxi. p. 115., “that in many consultations at which he has been present, the tenderness on pressure and on striking the vertebræ, showed plainly enough that the spinal cord was physically affected.” The above authors, and many other eminent men have collectively enumerated a very long list of

diseases attributable, directly or indirectly, to the spinal nerves; and my own experience has enabled me to observe the correctness and importance of their views: yet upon their authority, rather than my own, I select for illustration the following diseases, lest the list should be regarded as the views of a favourite theory of a practitioner, enthusiastically maintained through opinion, rather than with reason.

## CHAPTER II.

WE shall divide the spinal cord into three regions, the cervical, dorsal, and lumber regions, and here point out only the principal affections that supervene when respectively and conjointly affected, either with or without incurvation: the latter, however, is occasionally so slight that none but the well-practised eye can readily detect it—a circumstance of the utmost importance to discover, as well as every other form of disease seated in the spine; because, if overlooked, the patient's affliction will continue to baffle all remedies, particularly when one or two vertebræ may be pressing injuriously upon either the anterior or posterior root of some nerve, or upon their origin in the spinal marrow, ere it passes to its destined organ; or upon the spinal cord, and thereby, in either case, interrupting the current of nervous energy supplying the adjacent and remote organs, for the continuance of their important functions. Hence the remote effect from the cause and importance of diligent enquiries into the nature of obscure complaints, and not limiting our examination to the part affected but tracing in

our minds its source, we may be led to apply our remedial skill efficiently where alone it can be so—at the seat of the disease. For instance, when the cervical region of the spinal cord is morbidly affected, the patient may have some of the following symptoms:—shooting pains from the occiput to the forehead; imperfect vision; strabismus; torpor and insensibility; noise in the ears, or deafness; apoplexy; loss of voice and power of deglutition; spasm of the muscles of the throat, extending to those of the face or of the larynx, trachea, or of the sternocleido, mastoidei, trapezii and intercostals, diaphragm, and other muscles of the chest, and of the arms; inability to support and rotate the head; cough; asthma; dyspnœa; congestion, and inflammation of the bronchial tubes and lungs; consumption; functional or organic affection of the heart, particularly palpitation of the heart; for this organ is analogous to other hollow muscles, and its lining membrane is supplied with nerves of special physical sense, the powers of which are exalted or destroyed by nervine alteratives of every class. Paralysis of these nerves is the cause of death in many cases of poisoning, according to Müller, who also says, that the motor or white fibrils of the heart are derived from the spinal cord, as well as from the sympathetic, and are analagous in structure to spinal motor nerves; and hence we can readily conceive how mental emotions may affect its movements. Corded-like tightness across the pit of the stomach is also a frequent attendant; and authors have recorded that when the spinal cord of the

#### DORSAL REGIONS

is found to be in an irritable state, apoplexy, para-



lysis, lunacy, epilepsy, palpitation, and more serious diseases of the heart may be engendered—and also of the lungs and bronchial tubes, cough, dyspnœa, purulent expectoration, pain in the breast, under either of the mammæ hæmoptysis and consumption; severe indigestion, and its varied consequences; inactivity of the mind and body; irritable stomach, and severe vomiting; torpidity of the liver, or vitiated secretion of bile, functional or organic affection of the kidneys, urine either larger or smaller in quantity than natural, vitiated in quality, often involuntarily discharged; hæmorrhoids; and in females, profuse menstruation, and constant leucorrhœa, morbid sensibility of the skin, &c.

#### LUMBAR REGION.

When this portion of the cord is morbidly affected, pains in the abdomen and considerable distention of it by flatus is a common consequence, attended by nausea and vomiting, quick pulse, hot dry skin, with morbid sensibility to the touch, and sometimes with partial or complete contraction of one or both legs upon the thighs, diseased prostrate gland, and permanent or spasmodic stricture of the urethra and retraction of the testis and scrotum, irritable rectum, and bladder urinating frequently, and occasionally with pain, whilst in other cases, complete retention of urine occurs. Organic and functional derangements of the uterus occur, such as delayed changes of life, painful, irregular, imperfect periodical secretion, with severe weakening discharge, sterility, hæmorrhoids, general debility, diseased hip joint, or sympathetic affection simulating it, impaction of scybala in the cells of the colon, exciting head-ache, palpitation of

the heart, ulcerated legs, epileptic, hysterical and fainting fits, and other forms of nervous affections to be hereafter noticed.

Cervical dorsal and lumbar portion of the spinal cord, may conjointly become morbidly affected by extension of disease from any given point exciting disease, and symptoms peculiar to individual portions of the spinal cord, varying in degree according to the urgency of the cause ; thus, the patient may have too much or too little sensibility of the skin, painful head-ache, giddiness or torpor, and insensibility, spasmodic action or loss of power of the muscles of the trunk and extremities, biliary derangement and constipated state of the bowels, a sense of constriction about the pit of the stomach and throat, oppressed breathing, deranged uterine function, paralysis of the bladder or rectum, piles, spasmodic structures, irritable prostrate gland, &c.

Some of the most eminent practitioners in all ages have recorded the fact of having witnessed some of the above enumerated diseases, and sympathetic symptoms, and confirmed them to be either engendered, continued, or aggravated, directly or indirectly in the spinal marrow, out of which as it has been already noticed, issue nerves for complicated and diversified operations, necessary for the harmonious function of every organ of normal man. Notwithstanding, it is but too true, that medical men in general so perseveringly—nay, apparently superstitiously—attribute most diseases to that *ignis fatuus*, indigestion; making the stomach or the liver, the lumber rooms for all undefined diseases : sealing the whole terrific catalogue thereby attached, with de-

termination of blood to the head, and seldom or never reversing their view and examining the spinal column;—nay, many ridicule the idea of examining the spine, and disregard a tenderness over any portion of the spinous processes from its commonness, particularly in young people, as a symptom of disease in a remote or adjacent organ to the spinal marrow: and I grieve to admit, too frequently unhesitatingly avow to the patient such examination to be founded on empiricism and selfish motives.

Physiology and astounding facts, however, will even establish the importance of generally examining the spine in diseases, and remove the contracted notion that the stomach, liver, or the brain, is the primary source, directly or indirectly of all ailments the flesh is heir to, and that the panacea is that routine practice—bleeding, purging, blistering, and starving.

It is but reasonable that the spine should be examined, since its nerves unite by ganglions with the cerebral nerves, to form that important circle of nervous energy, upon which depends every normal organic function throughout life; therefore, when any portion of this circle is morbidly affected, we should trace in our minds the origin and connexion of the nerves of the part most inconveniencing the patient, to which our attention is naturally directed, and take a comprehensive view of the symptoms, ere we can hope to make a correct diagnosis and pursue a successful plan of treatment. Although in health, all organs act harmoniously imperceptibly to us, yet whenever an organ is influenced by an irritated nerve, at its origin or termination, its regular function



becomes disturbed, or in an active state of disease. Thus the function of one organ imperfectly performed may cause another organ to be affected, either to increase or modify the morbid action of our susceptible nature, particularly in females of delicate constitution, in whom the slightest interruption to the current of nervous energy may engender causes destructive to health. Nervous constitution may possibly be acquired in some degree by certain modes of living, as by the present system of education adopted for young ladies amongst the more wealthy classes of society, that of exhausting unduly the nervous energy in acquiring mental embellishments, and too much disregarding muscular action usually obtained in the merry gambols of youths in the open air ; doubtless favoring the firm developement of the physical frame, and accustoming it to the vicissitudes of our varied climate, and thereby rendering it less susceptible to be morbidly influenced : for although, “ man is born to trouble, as natural as the spark flieth upwards ;” yet in a moral and physical sense, he is so more or less in proportion as he regards the physical laws by which his system is supported in health. A robust person suffers from moral and physical causes much less than the delicate in health and strength. Spinal irritation, terminating in distortion or not, may occur at any period of life, still the stage of youth is usually the most susceptible to it.

In general, symptoms of spinal irritation develop themselves from these several causes, in either sex, from infancy to twenty-five years old, and afterwards partially subsiding. Patients afflicted with distortion of the spine

occasionally have their lives prolonged to a very advanced period, with however more or less morbid sensibility of the nervous system, affecting more particularly the respiratory and digestive organs.

### CHAPTER III.

IT is often asserted, that cases of spinal distortion and nervous irritation have lately increased in the aggregate, and particularly in the more refined portion of society, amongst whom it is asserted to be greatly upon the increase, by modern authors, upon the subject of spinal distortion. If we may entertain the influence of our own experience, authors have followed the example of one another, set them by Pinœus, as far back as the close of the sixteenth century, who has written that so common was spinal distortion in his time, “that of fifty females of the higher or educated, and more civilized ranks of society, scarcely two could be found who had not the right shoulder higher and projecting more than the left.” This is said to be an invariable effect of lateral curvatures of the spine, and which unassisted nature ever fails to remedy. Now, if we may judge by history, of the degree or standard of educational proficiency of that period with the present, it may not be too much to assert, that now a young lady often enters a seminary, or a finishing one, better informed in scholastic knowledge than even her great grandmother was on finally leaving it; yet, I am certain, that cases of spinal distortion are now infinitely more rarely met with, than Pinœus said they were in his time; when, undoubtedly

physical education was scarcely restricted for mental embellishment, as is customary in the present age. From which circumstances, a fair inference may be drawn that *physical* education now so much insisted upon, is not so certain of securing the normal human figure, as adopted among the most refined classes for the initiation of their juvenile students to knowledge, through the varied attractive forms of the present publications, and obtained by most uninterrupted application and mental efforts; yet, confessedly in our opinion, less useful as an element of domestic happiness, than was possessed by their progenitors, whose education was subservient for the duties of a wife and a mother to secure the love and applause of her family, rather than visiting acquaintances and strangers. Facts and inferences lead us to conclude that the scholastic routine before and after the days of Pinœus, were not so rigorous and continuedly devoted to the instillation of mental acquirements, as is customary in the present day to strain for the attainment of, (shall I say) an imaginary excellence, to the exclusion of nearly all the requisite knowledge of the duties of a wife and mother, to which honorable distinction all are naturally intended, and their education is ostensible, and should be subservient to it, and not for exciting the applause of the stranger, which frivolous vanity, once engendered in the youthful breast, is as insatiable a pleasure as it is faithless and incompatible with domestic happiness.

It may be asserted, after close and ample opportunities of observation amongst the higher classes of society, and in the superior seminaries, that spinal curvatures



in the present day are not so common as represented two hundred years ago by Pinæus. That there are in the aggregate a greater number of cases, it cannot be doubted, in consequence of the increase of population; that the assertion of Pinæus, “that scarcely three straight-spined young ladies could be found in fifteen:” it would now be nearer the truth to say that scarcely three in fifteen could be found with a crooked spine; but confessedly, it is difficult to say at what ratio the cases may be in proportion to the whole population, for the question is surrounded with difficulties, and rendered more abstruse, by the works of modern authors being filled with cases selected from the higher classes, and insisting that they are on the increase. This they attribute to the rivalry of parents and conductors of our superior seminaries, whom they censure most unmercifully, although they are as guiltless of the cause, as they are accomplished and essential for the convenience and necessities of the public, who are much indebted to them in these unrivalled days of competition for public favour, wealth, and consequence, for taking upon themselves the onerous, rather than the delightful task to teach the rising generation, and subjecting themselves to unfounded charges and misrepresentations, in their laudable emulation to excel one another in catering means for the education of the offspring of their overdesirous employers, and keeping pace with the general advancement of knowledge. Hence the parents are the true source of severity, if there be any, in enforcing mental *application*, and whatever dire consequences may follow the forcing principle of instilling into the minds of their children,

in the least possible time, the most proficiency, whether they have talents or not to acquire the slightest portion of their multiplied tasks, totally disregarding that the permanent impression on the tablet of memory is just in proportion to the time devoted to their acquisition and their quality, with the interest in the habitudes of after life. In respect to the caprice of fashion in the destructive custom of tight lacing, teachers must be totally exonerated, since they have only to dress their pupils in the clothes forwarded by their parents or their dress-makers; consequently the barbarous practice of bisecting "the human form divine," not only to derange the important functions of the liver, but often irreparably exciting extensive diseases of the spine, heart, and lungs: nay, the destruction of life, and invariably the beauty of the exquisite proportion of an English woman, is sacrificed to the form of that venomous insect, the wasp. It is also of the utmost importance, both in a domestic and national sense, that every cause tending to keep up a general feebleness of the females should be discouraged, since delicacy of frame and constitution of a wife is but too often a source of the husband neglecting his wife, or exciting her jealousy, severe reproaches, &c.; and as a national reason to be avoided, we need only mention that no people will long hold a high rank among the nations of the earth, where delicacy of frame and constitution are associated extensively, as requisites to female beauty and interest.

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## CHAPTER IV.

FACTS and analogies, in our opinion, refute the supposition that spinal distortion has of late years increased amongst the higher classes, as compared with others—or indeed in any class of society, in a greater ratio than is to be allowed for the increase of population; nor am I more inclined to believe that factory children and artisans, such as tailors, miners, labourers, or artists, have spinal distortion or irritation, engendered by the nature of their daily avocations. That tailors have one shoulder higher than the other, with a slight degree of lateral inclination of the spine to the right side, we readily admit, for it is produced by the right arm being kept in active, muscular action—in sewing, whilst the muscles of the left arm are quiet in holding the work on the knee; thus its muscles, together with those on the back and chest, are comparatively small, weak, and poorly developed—consequently are overpowered by their corresponding muscles of the right arm, and drawn over the convex curvature of the spine, and thereby elevate the left shoulder above the right, which is pulled down, forming a concavity of the spine towards the right side, just in proportion to the convexity on the left side. All forms of inclinations of the spine arising from the daily avocations of different artisans, may be explained upon the same principle—that is, inequality of muscular development; they are not worthy of being regarded as spinal distortion, since it is not attended by any personal inconvenience, or productive of those serious consequences we are about to consider, nature having formed



us creatures of circumstances; hence we are easily, and generally harmlessly, initiated physically and constitutionally into the required habits of attitudes. Deformity is then by no means to be ascribed exclusively to the operations of adventitious, physical, or moral causes; nor to be considered as limited in its existence to the more wealthy and civilized portion of the community, than to the less fortunate, but most numerous portions of it, who earn their means of existence in factories, &c.

Had I not had ample experience and opportunity to make practical observations for more than twenty years, in public institutions and in private practice, I should have hesitated in dissenting in opinion as to the cause of spinal and other forms of distortions, from authors who have obtained authority in their profession. I conceive their opinion was derived from diffidence for one another's published views, or love of fashion rather than the result of their experience, in so generally attributing the cause amongst the higher classes to the neglect of physical education in our seminaries for young ladies, and in the lower classes to undue physical application, enforced by manufacturers from their juvenile operatives, and censuring most unjustifiably the conductors of these scholastic establishments, and the manufacturing capitalist. To view the principal causes of spinal affections and distortion of the limbs to be the result of either riches or poverty, is contrary to facts that daily observation forces upon us; that these circumstances often develop the affections in a predisposed constitution, as other adventine causes, there can be no doubt; but hereditary influence and tendencies of certain tempera-

ments are causes of paramount importance, acting by their debilitating control, in retarding physical organization, and particularly arterial deposition of sufficient ossific matter into the interstices of the animal portion of the bones, which alone produces their hardness and their useful properties, without which, or when slowly deposited, the bones remain soft and spongy, and incapable of supporting the weight of the body, and thus the limbs and spine become curved, or their ligaments become elongated, instituting subluxation of the spinal joints and spinal irritation from pressure of the vertebræ upon the spinal nerves. However much it has been of late the custom to disregard cases depending upon the temperaments, I assert, that the cases that have presented themselves under my notice, ought in a great many instances to be ascribed rather to predisposition arising from peculiar temperaments than to concomitance of poverty, neglect of physical education or undue mental application; although, modern authors imply, that amongst the higher ranks, scarcely a young lady can be found whose back-bone is not either more or less diseased.

From my own observations, I must beg to deny that the physical occupation of factory children necessarily establishes distortion of the limbs, or disease of the spine, in a greater degree than neglect of physical education does amongst the higher classes of society. Without hereditary or constitutional tendency, deformities are more rare than is generally allowed by medical practitioners. Yet, confessedly, it is sometimes difficult to point out the symptoms that characterize exactly the cases that depend purely upon adventitious favorable circumstances in

either class of society, from those depending upon hereditary or constitutional causes. The aspect and history of the patient's case, and that of his progenitors, will in general be sufficient indicators to form a correct diagnosis.

In hereditary subjects, the disposition for morbid action alone is inherent ; morbid action or disease being in them readily excited, and developed by certain adventine causes, such as insufficient food and clothing, damp or confined residence, or undue physical application, or luxurious habits, and neglect of muscular exercise ; thus analogy is established between the operations of causes tending to produce deformities among the rich and poor children, because the neglect of physical education amongst the rich, and undue physical or mechanical application amongst the poor, enervate the body ; hence we may consider that the *modus operandi* of both extremes influences the constitution, so as to establish the same final results in predisposed constitutions.

Doubtless original debility of constitution in a child may exist without any assignable cause, or depending upon unfavorable adventine circumstances having influenced the mother's constitution during gestation, independent of any hereditary disposition, derived from either parent ; or one or both parents may have their bones more imperfect, or in a softer and more yielding state than is proper—a condition materially facilitating the supervention, or contributing to confirm a disposition into morbid affections of the spine,—and it must be confessed, that in very many of the more aggravated cases, the local deformity is intimately connected with an originally delicate frame, having its ossicular construc-



tion tardily developed. It would be difficult to determine how far a person with a purely delicate frame, unaffected with any particular disease, tends in the next generation to establish a predisposition for any kind of morbid action; it is, however, very probably the case, and we also observe that a delicacy of frame arising from mechanical injuries or illness in a mother will cause a delicate offspring. In the moral discipline of the Church of Rome, it was a maxim with the leading members to "Beware a Breed," and history informs us that no congenial breed had to lament the application of the spirit of the maxim.

The physical application of the principle is well known to be observed with success by breeders of animals, to obtain various excellencies, by crossing those animals that most approximate the desired qualities of excellence, either in power, speed, or symmetry; for instance, in a horse or a dog, or for superior qualities in the cow, sheep, &c. Sportsmen have observed that physical excellence of power, speed, and elegance of form, may be retained for any given time in pointers and setters, by breeding in and out, but not their sagacity and staunchness in the field, and facility of being broken in—that is, to receive instruction to perform their duties well, unless each race have their sagacity excited by practical education, without which they become on each removal, dull, and eventually lose all their superior susceptibility to receive instruction, because it is a well ascertained fact, that animals have a tendency, like cultured flowers, vegetables, shrubs, &c., to return into their primitive condition. It is also ascer-

tained that by due regard to selection, certain diseases of which some breeds of horses are peculiarly susceptible, may be avoided, and health secured, as certain as size, strength, and other desirable qualities, by attending to the above principles. We cannot doubt that human beings are governed by the same laws, and that superiority of the mind and body are secured by the observance of the good old rule, "Beware a Breed." Our temperaments have a controlling influence over our moral and physical habits, which are hereditary after those natural to our parents; individually we observe that the temperament predominates after that natural either to the father or mother, when in them a difference of temperament existed; and apparently the offspring very seldom participate equally of the temperaments of his parents, and certainly in general, the temperament of children predominate after that natural to the father, and all mixed temperaments tend to return to that naturally primitive in line of the father, as the refinement of civilization, without continuous moral culture, tends to return into the stage of barbarity. Although our observations have not satisfactorily enabled us to say in which line, the father's or mother's, morbid complaints are predomintly conveyed to the offspring, we can, however, have no such doubts in asserting that the moral tendencies of our temperaments predominate most tenaciously in that of the father, and we need no stronger illustration than the history of eminent families of various countries, which presents itself to our notice, and indeed our knowledge of the character of old families, proprietors of entailed landed estates, who have

for ages inherited them in the male line ; some are proverbial for their high sense of honor, benevolence, and active habits—whilst others are noted for recklessness or sordidness ; some are firm of purpose, but requiring forcible necessity, or interested active example, to excite them to good or bad actions. These and other facts that may be readily adduced, confirm that the tendencies of temperament are capable of being modified by tuition and example, but require to be commenced for moral improvement, at an early age, and rigidly continued ; otherwise the fundamental principle of the temperament for bad purposes will overcome the influence of tuition and example.

This theory may be illustrated familiarly by the variegated holly, the variation of which is the effect of special culture of the common holly, into which state it returns when left to increase by its seeds without culture. These facts plainly suggest the national importance and advantages of a general system of education, and diffusing knowledge among the lower classes.

Being habituated at an early age to learn reading and writing and the simple rules of arithmetic, together with moral precepts and the force of example of a well-conducted school, tend materially to engender a desire for rational occupation, even among the juvenile members of society who are of unfortunate temperament and disposition, but who are capable of being modelled into habits of usefulness and sobriety, or at any rate, it is the most likely period to lead them to add to the wealth of the community, and thereby morally benefiting it, rather than be left to the guidance of their unfortunate propen-



sities, or the natural consequences of their *neglected condition*, and drawing others into the vortex of their iniquities, together with their luckless progeny, thus to be an infinitely greater expence to the nation, in supporting and punishing them sooner or later for their misdeeds, than would have been required in the pliable stage of youth to stimulate their energies, and guide them morally and physically to useful purposes, or at least to be passive, that is, neither doing much good to themselves or harm to the community.

The poor children and their connexion whom we see begging and loitering about the streets, watching an opportunity to steal, are objects of pity and of disgrace to their country, rather than objects of abhorrence.

Hereditary physical peculiarities are more striking, but possibly not so common as those of moral character; the latter, however, may be more comprehensively considered hereafter under the heads of different temperaments; hereditary, physical peculiarities are those cognizable to our senses. The following may be regarded as a few examples:—particular construction of the body, gait, countenance, or curl of the lips in talking, voice, baldness, prolificness, longevity and the reverse.

Every family intermarrying amongst one another retain more or less their peculiar characteristic features; thus, on the same principles, we may nationally distinguish an Englishman from a Frenchman, and a Scotchman from an Irishman; and from all other people, the singular and living testimony of the truth of the Holy Writ, the Jews; yet there is as great a variety of indi-

viduality amongst them as in the members of any other nation.

Since it is generally the received opinion, that the physical and moral tendencies of our hereditary temperaments are more tenaciously stamped in the offspring, after that which is natural to the mother, than that of the father; it will be well to give a reason why I do not assent to the common opinion: it appears to me, that the impression has arisen more naturally than correctly, from the circumstance of the mother nurturing her offspring during gestation with her blood, and afterwards with her milk, for as long a period of nine months or more, rather than from facts derived from observation of the habitudes of the children in after life.

I regard, as a sufficient reason, that the milk has no influence in the formation of the temperament of an infant; the fact of there being no instance of a child having engendered the temperament of its foster-mother, or even that of her constitutional complaints, which might have developed themselves either before or after becoming a mother; I do not, however, deny that an infant may be inoculated with an adventine disease by suckling a foster-mother.

We have no means to decide equally conclusive after which parent morbid complaints are most predominately conveyed to the offspring. It appears to me, that certain morbid affections are conveyed by the mother; others by the father, and for want of additional authenticated cases, a general classification cannot be formed.

We are not, however, in this uncertain state as to

which line that of the father, or mother, continue most tenaciously the physical or moral tendencies, because it is rendered evident to us by the history of sovereigns of different nations descending in the male line.

Moral qualities, be they either good or bad, mark the race, particularly their evil propensities, in spite of several marriages with strangers, and even personal experience of correction and vicissitudes. It is observable to every body in our country, that the representatives of titles and estates that continue in the male line, are marked for their virtues or vices and characteristic temper, notwithstanding their marriages might have been in each generation unconnected with their own family.

The Catos were all stern, upright and inflexible; the Guises, proud and haughty at heart, yet affable like Napoleon, and thereby gained great popularity.

That physical form is perpetuated in the male line, I may mention as an example, the fact of Frederick the First of Prussia, having collected tall men from all parts of the globe to form a regiment of gigantic guards at Potsdam; and Dr. Foster assures us that a great portion of the present inhabitants of the town and its vicinity are remarkable for their extraordinary height. The nose is also often characteristic of a family, and, as Washington Irving pleasantly observes, repeats itself through a whole gallery of family pictures. These considerations are sufficient to justify us in asserting that physical peculiarities are retained predominantly in the male line, as certain as constitutional peculiarities are hereditary in families, and diseases are propagated congenitally.



It is not, however, denied that occasionally we observe that amongst children of the same parents, different hereditary constitutions occur; one will partake of the temperament natural to the father—another after that natural to the mother, or after some grand or great-grand parents, and also their diseases. Diseases that are considered hereditary, exemplify that an ulterior generation or two may occasionally be passed over. It may be objected that the habits of hereditary complaints, such as insanity, cancer, gout, scrofula, and particular organic affections of the spine, liver, stomach, bladder, &c., should be considered as proof of temperaments and diseases being the same, and passing over generations and necessarily being the same in the last patient as in a patient in a former generation; I have, however, extensively observed that specific diseases have their specific constitutions or temperaments to engender and continue, in which I shall hereafter have occasion to point out examples. It appears also very probable, that those numerous cases of insanity that we read of in history, were occasioned by the mental excitement of the “Holy War,” as it was called in the spirit of chivalry, and the reform of Luther. During and after the French and American revolutions, M. Esquirol says that, “many women who had been strongly affected by events of the revolution, bore children, who, on the slightest cause, became insane;” probably these cases were generally of a nervous temperament. The decline of the Roman Empire was marked by the general predominance of a nervous temperament, especially among the Roman women; hence, it is of great importance that the physical education of the rising

generation should be more cultivated, in order to give strength of frame and tone of nerve to guard against this over susceptibility, and for the important purpose, lest the young men should regard as requisite to female beauty, extreme delicacy or effeminacy of frame, and to be interesting, timid and nervous; errors that cannot be regarded otherwise than most serious in their consequences; a source but too often destructive to conjugal happiness, absence of confidence, of constancy, and blighted hopes of a family, and if otherwise, the increase only live to entwine themselves around their parents' heart—to leave a sad impression, or live too infirm either to fill, advantageously, a civil or a military station.

## CHAPTER V.

It is supposed that undue delicacy of frame and nervous system has been brought about amongst the wealthy classes by that refined mode of cooking, to tempt the appetite with a great variety of food.

The history of the habits of the higher classes, in olden times, both in England and France, contradict this general impression. In France, the higher classes lived far more sumptuously and refined in their cooking about two hundred years ago, than they even do now; yet, indigestion was not a subject treated upon by medical writers in those days, by either the French or the English; when, in the good days of Queen Bess, the viands partaken of by her noble and gentle subjects, were just the reverse of what was customary with the French gentry; for instead of refined stews, they were of the most sub-

stantial character; for instance, the allowance to each of her maids of honor for breakfast, was “two pounds of beef steak and two quarts of strong ale;” this being the commencement of their daily business; her Majesty having occasion, now and then “to box their ears” in the after part of the day, might have been excused, rather than severely commented upon by our modern biographers. In the present day unquestionably the most *recherché* dinners are not found, as formerly, amongst the French nobility, but amongst the wealthy inhabitants of England. Who can deny that in our late war our gentry have not endured the toils of the active field of war as vigorously, and as harmlessly in constitution as any of their less indulged companions? and it is well known that the French officers sustained better than their men the fatigue of the disastrous retreat of the army from Moscow. Again, now in time of peace, none can surpass the English gentry in the active and arduous pursuits of field sports, or in the application of those who devote their energies to science and literature. In short, it appears that the strongest and most healthy people, and least subject to indigestion, &c. are those who live upon the most nutritious and palatable food, and are agreeably and actively employed, and subject to least anxieties.

It must be very extraordinary to some delicate and nervous people, that hearty feeders and free drinkers enjoy health and live to a great age, totally independent of all slavish rules and formularies of our modern gastronomists. Indeed, I have often observed, whilst acting as a medical officer to public charities, that



even drunkards generally digest their food well ; these facts ought to be very cheering to the dyspeptic or the anxious, unhappy, hypochondriac beings, who deem it necessary, if their circumstances will permit, to seek excitement by novelties, by progressively visiting all the celebrated watering places, and at each place consult their popular Priessnitz, Hahnemann, animal magnetisers, and other humbugs, who it is to be feared, but too often successfully regard them as sportsmen do woodcocks—as birds of passage, and fair to let fly at them at all distances, so that they do but “*bag their game.*”

Thus the *few* that are permitted to return home, are so cut, maimed, and plucked, that their old, sincere, unpretending medical adviser scarcely knows which affliction is most urgently requiring his sanative skill, now sought and accepted with pleasure ; having dearly bought knowledge that medical skill is not necessarily possessed by a man who boasts of his hundreds of patients ; though it may be regarded as a fair inference that his talents are unquestionable in humouring his patients, and guiding them to shed their golden lustre.

Nervous and dyspeptic patients generally make anxious enquiries as to the manner they should live—for instance, at what time they should retire to rest, and rise in the morning, and at what period of the day, and kind of exercise they should take, and what they should drink, and even how many times they should twirl their food, to secrete sufficient saliva, &c., just as if the all-merciful Being had not given as much sense to his human creatures as he has given instinct to the beasts of the field, to know what articles of diet to select and

“denticate, masticate, chump, chew, and swallow,” and what to avoid; and the stomach will inform every man when it is indisposed for food, when it has received enough, and when it is overloaded, and his feelings when to sleep and to take exercise. What we have said elsewhere respecting the rule for diet in and out of health, may here suffice.\*

“They that are whole need not a physician, and may eat and drink what they please, and they that are ill what they can.” Fortunately for the happiness of the people, they do not consult the doctors of the learned professions in general, as to what they should do, or of what they should partake, because experience has taught them to expect to be told, that what they most like is either unwholesome or unlawful. Indeed, to decide upon a diet applicable for healthy or unhealthy persons is, I conceive, a moral impossibility, because man is the creature of circumstances; therefore neither his physical nor his mental appetites or powers approach to a state of uniformity; they are in fact in the highest degree variable, according to the natural production of the earth, as food for him in the different climates. Though there are no inhabitants of any nation who confine themselves to one particular kind of food; nevertheless, the natural production of the country may oblige them to subsist principally upon some of its particular productions.

It has been observed that our energies and intellectual faculties are under the influence of our food, and

\* Dr. Evans Riadore's Introductory Lectures on Nervous Irritation and Spinal Affections.

that they are rendered more keen or less vivid by temperance or excesses, from the circumstance of the nature of our ingesta influencing our moral powers when our physical energies are either elevated or depressed, and hence that our moral and physical courage, and our mode of thinking, and even the form of religion and degree of attention paid to its rites, are under the controul of the diet. Thus, under this mighty influence, man displays energies which lead him boldly to dare danger and complicated suffering, or he is reduced to the most degraded state of miserable despondency.

When the digestive organs become either functionally or organically deranged, great depression of spirits and anxiety is evinced by the patient, respecting his condition and ultimate safety. Indigestion, nervous affections, and diseases of the heart, &c. apparently affect equally all ranks of society; yet there are some persons who suppose that the affections are now more prevalent, and that there must be some principle more active than formerly in engendering them. Two hundred years ago, diseases of the poorer classes were not so generally attended to by medical men as in the present time, consequently we are not so well acquainted with them; but history informs us, that they were occasionally awfully swept off by the plague and other epidemics: from which facts a fair inference may be drawn that they were insufficiently fed either in quantity or quality, or both; a cause continuing to operate more or less, to this comparatively advanced period of civilization; for even now, most people are involved in a continual struggle, so severe as to absorb their whole faculties and energies,



to find means to supply the necessities of life. Again, the higher classes, who may be regarded as pioneers of society in civilization, since all other ranks follow their example in moral and refined habits of life, according to their several stations and means, have their faculties energetically occupied in acquiring the accomplishments of their co-equals, or in excelling one another either in private or public life, to command respect and confidence; they also have their annoyances and cares: for wealth is accompanied by both, as sure as envy is the shade of merit.

It may therefore be safely conceded, that all classes obtain their superior comforts and advantages over one another, only by incessantly tasking the brain, and by stimulating it with thought and reflection. The brain is thus incessantly excited in one class of people that are under fed and ill provided in all respects, and in the other, without bodily exercise, and often in the vitiated air of crowded rooms and unduly stimulated with intoxicating liquors. Hence, indisputably arise causes that tend predominantly to induce very distressing complaints of the nervous system, of which our forefathers had no experience, although the exigencies of recent times have certainly brought the nervous system into a degree of action and over-susceptibility to action beyond its power healthily to continue, and consequently irregular distribution of the nervous energy, and disease in one or more organs occur; however, in the aggregate, we all enjoy more comfort and less hardships, since the social system has of late years, comparatively become changed.

Since various causes influence the system into a diseased state, independently of the quality or quantity of food, it may not be too much to infer that it is a good rule for persons to eat moderately of whatever they are accustomed to take, and like, rather than, as it were, weigh in their minds the capabilities of their stomachs. Indeed it is particularly suggested, since it is a well known fact, that when a person's attention is arrested for a certain time on some interior organ of his body, undue heat is produced in it, and its function becomes modified, and new sensations are perceptibly engendered injurious to health, and converting an imaginary affection into a real disease.

It was observed that Corvisart's Lectures on the heart fixed the public attention to that organ, and thereby greatly increased real and imaginary affections of it; and so did Broussai's teaching respecting gastritis, increase affections of the stomach. Hence the importance of diverting the mind of the nervous and the invalid, by amusements and exercise in the open air, because such means tend equally to benefit the student, the sedentary, and the idler, by relaxing and diverging the current of their thoughts, and changing the degree of rapidity of the circulation of the blood of the sedentary and the idler, and thereby lessen its tendency to be determined by the mind unduly to any particular organ, to favor or establish morbid action.

It is common to adduce the inhabitants of the equatorial countries, and those of the polar climates, as instances of people enjoying health and stability, void of personal deformities, under the influence of food

diametrically opposite in quality and in quantity partaken of; from which circumstance it is inferred, that diet is of but little consequence. These and other romantic ideas entertained respecting the savage condition, are however on the decline, since modern travellers affirm that that state of society is attended by evils and sorrows, as well as that of civilization; which indeed appear to be inseparable from human life in every condition, and we may add to the life of every animal; since we know that the birds of the air, the beasts of the earth, and the fishes of the sea, are in continual fear of the tyranny of one another, the rapacity of different species, and universally in fear of man, either tame or wild.

The once alleged absence of indigence and disease amongst the primitive tribes, is thus summarily treated upon in a later work by Dr. W. C. Taylor:—"It is generally agreed that indigence consists in the want of some things absolutely necessary to existence; such a state cannot exist in barbarous life; the savage either lives or dies; he is never precisely rich or poor; whilst the means of subsistence are afforded, he exists from hand to mouth; when they fail, there is no one from whom he can beg or borrow, and few he can plunder." Thus it is evident a cripple must soon die of starvation; for his infirmities prevent him following his migrating parents in the chase, even if we allow the parents to have that solicitude for their offspring, common to birds and beasts, who at the risk of their lives will protect and feed their young until they arrive at the age usual to be capable of helping themselves; afterwards they lose their love and care for their offspring, and beat them away, either to prepare for



another brood, or a life of independence for a given season. Thus then we may account why cripples are not met with in savage life; we may therefore ever regard a cripple incapable of helping himself to necessities of life, as a proof of a certain degree of civilization in his country.

Again, Dr. Taylor says of savage life: "With him, destitution is death. It is true that he can support hunger, thirst, and pain, to a degree which we cannot approach; that he will feed on substances from which we shrink with horror; but there are limits to his powers of endurance; when these are passed, he sinks unnoticed and unknown: there is no one to record that a unit has been subtracted from the amount of human existence. The uniformity which travellers and voyagers have discovered in savage life, is a condition but one degree higher than absolute starvation. Those who sink below it disappear instantaneously, and are as if they had never been. For similar reasons severe diseases are rarely seen by the casual visitors of savage tribes. Death is their doctor, and the grave their hospital. Those who have resided amongst them, testify that diseases are produced by the privations endured at one period, and the repletion in which they indulge when a time of plenty arrives; but unless the cure is rapid, the termination of the disease must be fatal. When patients are left entirely to nature, it is found that nature presses very hard for an immediate payment of her debt."

It may be physically explained why the inhabitants of the hot and of the equatorial countries should be herbaceous, and those of the Polar climates should be

more carnivorous, and differ as they do in temperaments. The carnivorous man would die under the line by too great a quantity of nourishing aliment. Thus the inflammatory diseases to which all Europeans are more or less subject to, who go to the Indies, arise probably from no other cause. Those who recover, have their plethoric state reduced and are rendered more congenial to the climate to enjoy health, whilst the plethoric state is essentially necessary to live and enjoy health; exposed to the vicissitudes of a cold climate, the reverse would cause the death of the Phytophagyan under the Pole. Experience has shewn that a transition of an herbaceous inhabitant of an equitorial country, into a cold one, is just as unfavorable as in the reverse case from want of nourishment and stamina; hence their complaints are not of an active inflammatory character, but of a chronic nature, greatly depending upon debility, as scurvy, or affection of the lungs, or of the mucous membranes of the bronchial and intestinal tubes.

In the immediate space between the Line and the Pole, we meet with others who intermix vegetable aliment with flesh of animals, according to the degrees of latitude in which they live.

Vegetable food produces in the inhabitants near the equator, a pusillanimous, irritable, feeble, mild, tranquil, speculative, superstitious, avaricious, and careless state of mind. All their energy is centered in the pleasure of love and the delusion of trifling imagination. Such may be said to be their natural and general character, as the following is of the inhabitant of the Polar regions, who, on the contrary, is carnivorous, robust, ferocious,

and brutal, without moderation or religion, courageous even to rashness; free, sprightly, and inconstant, his judgment is as dull as his senses are coarse; in him every thing expresses durability; his energy is a kind of furor, and his voluptuousness excess. The former is exposed to the most abject slavery, the latter becomes a most intolerable tyrant.

In thus generalizing the character of the inhabitants of the northern nations, it is not to be inferred that it is individually correct, because it is well known that they can boast of philosophers, and of merchants and politicians of great eminence.

## CHAPTER VI.

HAVING made general observations upon the physical and moral causes that tend to form man as we find him, varied in power both in mind and body, I shall now proceed to consider his different temperaments, and the usual attending symptoms of nervous affections and indigestion, and how far indigestion may be legitimately considered as a primary disease. The public are confessedly led by the general explanation given by their medical attendants, to regard those feelings usually classed under the head of *nervousness*, to an imperfect state of of the digestive organs.

Notwithstanding the various improvements suggested in the works of medical authors on this head, still there are difficulties in regard to indigestion to be explained or removed, which we conceive may be effected in a great measure by due regard to methods already pointed



out to us by different writers, avoiding as much as possible new theories, or rashly forming them.

Indigestion is defined by an eminent author, as a primary disease, or as a general term comprehending many species. The first of these views is extensively adopted, and it appears somewhat objectionable, because it limits too closely the cases which the definition comprehends as the functional, organic, and sympathetic indigestions, for we cannot have *one* indigestion to be treated by one invariable plan. With a view to the second, it is necessary to establish a division of temperament,

First then, it will be necessary for the importance of comprehending this view to divide mankind, relatively to temperaments. Secondly, the modifying influence of temperaments upon indigestion. Thirdly, symptoms common to indigestion arising from various causes.

It is avowedly difficult to point out in language sufficiently distinct the various appearances of indigestion, and comprehend their cause and peculiarity in every individual case; yet upon our power in doing so, will depend our general success in treating individual cases. A routine practitioner, by observing contracted rules as the cause of indigestion, follows certain plans of treatment successful in one case, futile in the second, and injurious in the third. Thus we hear continually of Dr. A. curing Mr. B. by purging and low diet. Mr. B. recommends two more patients having apparently the same symptoms as himself, and who undergo the same plan of treatment, one without benefit and the other is made much worse; the latter now consults Dr. C., who by stimulating medicine, food, and exercise cures him,

whilst the other patient is made worse, but is cured by Dr. D. by counter irritants, gentle and soothing remedies.

Thus by these and other different exclusive views, patients may be said to be accidentally cured, or injured, or harmlessly treated upon plans of treatment strongly advocated by eminent or popular practitioners, although each plan indiscriminately pursued will prove more injurious than beneficial: still, in well selected appropriated cases, with due regard to temperaments, physical and moral habits of the patients, each plan will prove eminently successful as it was found to answer in the hands of its original suggester, who had possibly the knowledge to make judicious selection of cases for his plan of treatment by a species of thought that cannot be definitely explained in words; hence much of the science of a physician must be lost with his life, and the reason why the number of fixed principles handed down to us in medicine is small, in proportion to the vast thought expended on it.

Medical men deal not with words, but with things: their premises do not rest on precedent, like those of the lawyer; or on definition, like those of the mathematician: consequently they are greatly undervalued by the public, who, however, have no right to expect the same precision from medical interrogators of nature, as may be drawn from the written law of a country, or from precedents equally definite, because medical subjects of thought are obscure; consequently the definition cannot be clearer than the thing defined. In order to avoid the unsatisfactory result of theorising and generalizing from single facts or cases, or endeavouring to

accommodate all facts to pre-conceived opinions and rules of practice, founded upon a too narrow basis, we shall now proceed to consider particularly the tendencies, rather than the actual development of the temperaments in modifying diseases: the bilious, the sanguine, the phlegmatic, or the serous. These three heads condense the division of the early writers: for the distinction between the bilious and atrabilious state involves no useful difference, with, however, another important head, the nervous temperament, as influencing man, both physically and morally, in health and disease, which is not recognized in the works of the ancient writers.

Temperaments of individuals, or what may be considered their prevalent propensities, depend upon the natural influence of certain organization of the constitution or *idiosyncrasy*. The ancients considered organized bodies as an assemblage of elements endowed with different propensities, having their simultaneous actions blended to modify each other, and all controlled by the spirit of life; whilst all the organized propensities harmoniously tempered each other, the whole formed a perfect temperament, modernly termed constitution, or equilibrious condition of the frame of a hale and sane man; but if any of the elements failed in his organization, or predominated, the circumstance influenced the whole, and reversed the happy state into a disease of the body or mind.

The Greek physiologists were the first to classify these peculiarities or *temperaments*, the *naturæ* of Hippocrates, the *mixturæ* of Galen—terms founded on an imaginary depravation of the elements of the blood;



which elements they divided into cold and hot, dry and moist ; from the combination of these principles, they classified the fluids of the body. The blood was hot and moist, the bile hot and dry, the phlegm cold and damp, and the melancholy cold and dry. This division led to a further classification, according to the predomenance of these elements, and was divided into the *sanguineous*, the *bilious*, the *phlegmatic*, and the *melancholic* temperaments. Notwithstanding the ingenuity of modern hypotheses, it is more than probable that this old classification will still prevail over our modern classification of nervous system ; vascular system, and muscular system, with subdivisions applied to regions and to organs, &c., being natural or acquired temperaments, as in the old classification. Blumenbach has observed of the old division, that although it was founded on an imaginary depravation of the elements of the blood, if made to stand alone, it will prove both natural and intelligible.

These supposed radical fluids, influencing the whole animal frame, were dependent upon certain organs for their specific production ; for instance, the blood by the heart, the phlegm by the head, the yellow bile by the gall-duct and the black bile, or atrabile—the principle of melancholy by the spleen. This doctrine of fluidity is still applied to many functions that we cannot otherwise describe, although in a figurative manner. For instance, we say nervous fluid, the vital fluid, and a good humour, a bad humour, a vein of humour, or a humourous vein ; all are illustrations of peculiar tempers and temperaments. Again, temperaments are still distinguished by the same terms applied to them, as the ancients did ;

for instance, we describe one man as choleric, or bilious for *cholera*—another as being *melancholic* ; a third of a sanguine disposition ; and a fourth of a phlegmatic habit.

Although this classification since Hippocrates has laid the foundation of all the systems of temperaments, constitutions, and natural characters, that have been advanced by various philosophers, it is still most admirable, and probably not more improved by the modern addition of nervous temperament, being nothing but a modification of the ancient four categories.

We shall now take a view of tendencies of the several temperaments, or divisions as illustrated by modern writers.

In the sanguineous temperament, the heart and arteries possess a predominant energy : the pulse is strong, frequent, and regular ; the veins blue, full, and large ; the complexion is brilliant or florid ; the countenance animated, the stature erect, the muscular forms marked and firm ; the hair of a yellow, auburn or chesnut colour ; the nervous impressions acute, the perception quick, the memory retentive, the imagination confident, lively, and luxuriant ; the disposition passionate, but not vindictive, and the passion is easily appeased ; amorous, and fond of conviviality and good cheer.

In this temperament, we find athletic strength and fortitude of mind in resisting the power of external agency, with mental tranquillity in the midst of danger ; a calmness arising from consciousness of power, and from less acuteness of external impressions and mental perceptions. Such a man, when roused to action, will endeavour to surmount every physical difficulty, but he

will rarely attain pre-eminence in sciences or in the fine arts, because his buoyancy indisposes the mind to fix itself perseveringly to one subject ; besides, to acquire a pre-eminence in science or the fine arts, it is necessary to possess an exquisite sensibility and activity—qualities seldom to be met with in those who are of this temperament.

Persons of sanguine temperament, or of a predominating tendency to it, are more subject to derangement of the heart, blood-vessels, or some of the vascular organs ; yet they are in general the most healthy class, since they have an inherent elasticity of constitution, not only to resist morbid actions, but to set it right again ; therefore it is neither necessary nor prudent to act by medical interference, with great activity, with a view to overcome excited action ; that is, by extreme violence of treatment, of which there is a disposition to run into, in the present age, both by medical practitioners and the public ; that is, to allow no deviation of natural function to run its course, ere a favorite drug is either swallowed or applied ; for the public confidently presume, in these days of self-sufficiency, to give their medical and political opinions, without ever having deemed it necessary to study the elements of these profound sciences ; totally regardless of the great probability that every unnecessary medical infliction is ante-dating death. These serious consequences cannot be avoided by random or routine practice.

The first true object of medical science is to supply rules by which the sum of vital power can be economized ; and secondly, by which opposite forces can be counterbalanced



or overcome ; and always to endeavour to effect these important purposes at the expence of one another, rather than to destroy vital power by repeated hap-hazard precautionary measures ; which is occasionally assuredly done, as that human life is maintained by a series of depositions and absorptions tending, by a very gradual progression, to a state appointed to be incompatible with the performance of its functions, when it necessarily ceases.

Although nothing can interrupt this silent and imperceptible change, there are, however, many moral and physical causes that accelerate it both in the strong and weak ; the physical powers are affected no doubt, by every unnecessary expenditure of strength by medical means ; and in the sanguine temperament it never ought to be lost sight of, that a very moderate dose of aperient medicine acts powerfully, and indeed, every stimulant and sedative. The ill consequence of drugs in this temperament is often overlooked, until it frequently amounts to a serious degree, in consequence of the elasticity and power of this temperament, in a perfect state to resist and overcome morbid actions.

In thus reiterating the sane powers of this constitution, I trust I shall not be understood as recommending an inert practice in the disorders of this class of men : for I am well aware, that their diseases are often very severe, and require proportionate severity of treatment ; my object is to point out that our medical measures should not too readily be allowed to interfere with the curative powers of nature.

I will here relate the outlines of a case of epistaxis,

that came under my care in 1840. A young man, about nineteen years old, of fair complexion and light hair, and of the sanguineous temperament, with admixture of the nervous, had been troubled for seven or eight years with this bleeding, from both nostrils on the slightest exertion, two or three times a day; thus he was much reduced and looked quite exsanguineous; he had lost his appetite, and experienced considerable heaviness in the head, vertigo, tinnitus aurium, blushing in the face, throbbing of the temporal arteries and quick small pulse, with a general sense of coldness and torpidity of the intestinal function. Before he consulted me, he had taken the usual remedies of zinc, diluted sulphuric acid, and purgatives, without deriving any benefit, I, therefore, ordered an enema twice a week of half-a-pint of water-gruel, mixed with half an ounce of castor oil and turpentine, and a pill, to be taken twice a day, containing acetate of morphia, aloes, gamboge and digitalis.

I also ordered a liniment composed of spirits of rosemary and acetate of morphine to be well rubbed along the spine and on the painful parts of the head daily: by this plan, slightly varied, he lost his bleeding, and in about three months, recovered his flesh and strength, although occasionally, about once in a month or six weeks, he has a slight return.

In many cases of epistaxis, where the cells of the colon are loaded with scybela, which, on being removed, the bleeding ceases, turpentine in doses of four or six drachms, with the same quantity of castor oil, swallowed or administered as an enema, mixed up with half-a-pint of water-gruel twice or thrice a week, is the only drug I

believe capable of exciting the cells of the colon to dislodge the scybelæ.

In the above cases, it was necessary to prescribe digitalis and morphia to lower the circulation and sooth the nervous system, which necessarily became irritable in consequence of the general debility arising from the continual loss of blood.

#### THE BILIOUS OR CHOLERIC TEMPERAMENT.

Here the liver and biliary organs are as redundant in their power, as the blood vessels are in the sanguineous temperament, and for the most part, at the expense of the excernent or cellulous and lymphatic system.

The pulse is strong and hard, but more frequent than in the sanguineous. The veins are superficial and projecting; the sensibility extremely acute and easily excited, with a capacity of pondering for a long time on the same subject.

The skin is sallow with a tendency to a yellow tinge; the hair black or dark brown; the body moderately fleshy; the muscles firm and well marked; the figure expressive; the temper of the mind abrupt, impetuous and violent; bold in the conception of a project; inflexible in its pursuit; persevering and dauntless in its execution. These are temperaments that have urged men both to noble and execrable deeds; such were Alexander, Brutus, Mahomet, Cromwell, Charles the Twelfth, Robespierre, Napoleon, Luther, Knox, &c., &c. All these celebrated characters evinced from their earliest youth the ambitious nature of their dispositions, and though circumstances might have checked the developement of their predominant passions, it was also to adventitious circumstances



that they owed their elevation, and the opportunities of displaying their good or evil qualities. Most of these men were irascible, vindictive, and cruel, and equally susceptible of ardent love and mortal hate.

The bilious temperament may be contrasted with the sanguineous or serous temperaments, as means for greater facility of comprehending the boundary of what is to be understood in a moral and physical sense, legitimately belonging to the bilious temperament.

In a moral sense, the bilious and nervous temperaments somewhat simulate both in a state of health and disease, yet a marked difference may be readily detected by the volatile character of the irritability in the subject of nervous temperament, from that attending the bilious temperament, which is more continuous, a desponding irritability casting a dark shade over the past, present, and future circumstances; casting bitterness on the confident and joyous temperament; severe and haughty disciplinarians, and of an unapproachable demeanour, sturdy and overbearing advocates of their views, right or wrong in the rostrum or pulpit; and by their energetical delivery of well arranged and laboriously acquired knowledge, they often succeed to convince or to frighten many to pray who came to scoff.

In the sanguine and serous temperament, disorders of the circulating system are the most prevalent, whilst in the bilious temperament a morbid action arises from either an obstructed, vitiated, or excessive secretion; it is comparatively more uncommon for the lungs and bronchial tubes to become affected in persons of such a temperament than in the two former, but appear to be more susceptible

to the formation of stone in the gall and uninary bladder, and of strictures of the in and outlets of the body.

A person of bilious temperament is very susceptible to dyspepsia, with characteristic symptoms from those attending similar affection in persons of other temperaments. Bilious indigestion may continue very protractedly without reducing much the physical strength of the patient, although morally he may be greatly depressed. When the power of the body and mind is reduced, the patient may be said to have advanced into the next stages, hypochondriasis and melancholia, which may be classed together, having no useful distinction beyond that of degree, and in both, the patient is generally asthenic, and the affection may accrue into a further stage of insanity, more commonly following bilious melancholy, because the patient is continuously overcast with grief, distress, and fear of death, suspicious of his friends, or disliking them. These symptoms of bilious melancholy somewhat simulate those attending the nervous melancholy; they differ however, essentially, by the patient, in the latter form, varying frequently in temper, exhibiting an excess of joyousness on one day, and on the next of sorrow, or varying thus, the same day. The pulse is more lively to the touch in the nervous than in the bilious melancholy, in which case it is slow with a clammy skin, and the patient having a fixed impression, right or wrong of the source of his malady, being just the reverse of what occurs in the subject of nervous melancholy, whose opinion of the cause varies as often as a friend gives a new idea.

The bodily confirmation of the bilious is usually represented as rigid and spare, rather than full or largely developed; the skin is more harsh and dry, thick and sallow, than it is in the sanguine or serous temperament, wherein a habit of body is assumed in both of the latter temperaments, in which disorders of the circulating system are the most prevalent, whilst morbid action in the bilious temperament implies an obstructed or vitiated secretion of bile.

The bile in persons of bilious temperament is compatible with health, copiously secreted, yet tending to produce gloomy but active imagination, a jealous, distrustful, and unsatisfied disposition, restlessly anxious to be engaged in some means to obtain fame or property; however much is already their own, it is valueless according to their desires.

In the division of the melancholic or atrabilious temperament, the biliary organs are brought into a constant and a morbid action, while the sanguineous system is weak and irregular. In these gloomy subject, the skin assumes a sallow, unearthly tinge, the pulse is hard and contracted, the digestive functions torpid and irregular, the imagination is gloomy and full of suspicion. and a dark gloom is shed on all around the morbid sufferer, for such he may be called, since the condition under which he labours may be considered one of disease.

These subjects are prone to various monomanias, uncertain, fickle, and oftentimes capriciously cruel. Tiberius and Louis the Eleventh are quoted as examples of this temperament. Many melancholic individuals have displayed great genius, and at the same time great



depth of thought. Richerand considers Tasso, Pascal, Zimmerman, and Rousseau, as illustrating this unhappy disposition.

The next temperament is the phlegmatic, lymphatic, pituitous, or watery, for all these terms are used by different physiologists, as synonymous. Here the proportion of fluid is too considerable for that of the solids; hence the body attains a considerable unwholesome bulk. The muscles are large, soft, and flacid, the skin fair and transparent, the hair flaxen or sandy, the pulse weak and slow, all the vital actions are languid, the memory little tenacious, and the attention wavering; an insurmountable indolence prevails, and averse to mental and corporeal exercise, the *far niente* is their greatest enjoyment, and a *siesta* is preferable to a coronet. These subjects are generally good, easy persons, susceptible of kindly feelings, but of a transient nature. Their mind is generally depraved by effeminacy, and their love is purely animal; they are not courageous, yet they show great tranquillity of mind in moments of danger, and would rather quietly sink than struggle with the waves, or if their dwelling was on fire, they would calmly walk out of it, without scarcely exerting themselves to put down the conflagration.

When hereditary power places them at the helm of a state, a wreck of the vessel may be speedily expected, or the sceptre is wrested from their feeble hands by either the choleric or the atrabilious enthusiast. It must be admitted that the main characteristic of this constitution is a deficiency of energy; it may be divided into two heads, one embracing those cases in which the deficiency

of energy appears to depend upon want of excitability, whilst the other appears to depend upon want of power in the frame, which may be regarded as the basis of asthenic, and the former of a relaxed constitution. In these forms of temperaments the skin is pallid and relaxed, differing, however, from the unhealthy hue of the asthenic. Persons of these temperaments are most liable to scrofulous affections, having sluggish or feeble pulse, which is particularly characteristic of the asthenic class, difficult of being excited, and when so, it only leaves an increased sense of debility; no elasticity, or reacting tendency, which are capable of being induced in the relaxed condition, where there is a dullness to excitability; here the pulse is sluggish, but capable of being roused into action, because in this form there is a power in the frame. When this temperament is connected with the nervous, a passive nature is the result, suffering but little physically, and morally capable of marking his existence in some science. Such a temperament Dr. Samuel Johnson may be supposed to have possessed. But when the asthenic division of the phlegmatic temperament is connected with the nervous, the result, in a moral sense, is a character represented by Wilfred in Rokeby.

In a physical sense, the diseases of the serous or phlegmatic subject are somewhat common to the sanguineous vascular congestion, with absence of fever; but, in the latter, the constitution seldom falls out of order comparatively, and if it does, it is soon convalescent again, which is just the reverse case in the serous temperament. In the treatment of diseases incidental to the relaxed

condition of the serous division, active purgation and stimulation are generally found to suit best, whilst in the feeble or asthenic division, purgatives and all lowering treatment is absolutely injurious, whilst moderate stimulants and tonics and judicious management of the secretions, together with a nutritious diet, in the smallest possible bulk, at long intervals, are invariably found beneficial; even aperient medicines should be combined with tonics and ammonia: constrictive effects of tonic medicine are here advantageous; but injurious, or at least useless, in a biliary constitution: friction to the skin with a brush or a stimulating liniment, warm baths gradually reduced in temperature to a cold shower-bath, are found bracing and serviceable.

Indigestion in a phlegmatic subject is tardily removed, like scrofula, and indeed most other complaints of which these patients are susceptible. We find that the mildest forms of mercury used very temperately, relieve and excite the relaxed habit beneficially. Many severe cases of indigestion may be cured in persons of the serous temperament, without medicines, by attending to the rules of common sense, and without doing so, no medicine will succeed; thus always avoid over-loading sluggish organs of digestion, or keeping them continually employed by eating frequently; let preference be given to food that experience has proved to agree and digest most readily, or in a word to produce no inconvenient sensation to the patient. Phlegmatic or serous temperament is opposed to the sanguine in two states, relaxed and feeble, although the relaxed state is common to the serous and sanguine, as well as their diseases of congestion; still the sanguine relaxed state is capable of



great endurance, and compatible with power, when roused into action ; circumstances incompatible with the nature of the relaxed state of the serous temperament, or at any rate comparatively so in a slow temperament, yet capable of much greater endurance, than the feeble or asthenic state, which is easily exhausted, and the patient dies without an effort at a struggle to overcome the disease ; hence this unfortunate temperament is not only easily set wrong, but most troublesome and unwilling to be set right, by either a soothing or a stimulating plan : whilst purgatives and all lowering means annihilate the patient altogether. Dry food at lengthened intervals, with a very moderate use of some generous wine that the patient likes best, and totally abstaining from slops, suit persons of this temperament best. Thus we see that a stimulating plan of diet is suitable—nay, advantageous to the relaxed and feeble states of the serous temperament, but is highly pernicious to the irritable stomach of the nervous temperament.

In the asthenic form in the serous temperament, there is no aversion to food experienced by the patient : but these symptoms usually only accompany indigestion in the nervous temperament ; consequently we are not to associate the idea that structural disease exists either in the stomach or in the tubes leading to or from it, when aversion to food, or inability to swallow it exists.

In the asthenic dyspeptic, a sense of oppression and congestion about the head and abdomen is experienced, that, in a different temperament would warrant depletion, but here would assuredly lead to dire consequences : therefore we should ever be very tardy in concluding that tenderness of the bowels is inflammation ; or that mesenteric

affection exist at an early stage, or a determination of blood to the head ; in fact, there are no capricious symptoms or temper in the asthenic, as occurs in the nervous dyspeptic. In the nervous atrophy, the patient generally will recover if he is not over-reduced ; atrophy engrafted upon original asthenic, or feeble constitution, will generally die in consequence of obstruction in the mesenteric glands, or by sympathy the lungs become affected ; we must not, however, overlook the fact that these two states, the nervous and the asthenic, may not co-exist, and that the nervous atrophy or hysteria may terminate in the form of fatal atrophy, or in scrofulous action, or tuberculated state of the lungs, or of the mesenteric glands ; nevertheless, we should contemplate these two states distinctly, in order that we may be less likely to apply to the one part of a complicated case a treatment which belongs to the other.

#### THE NERVOUS TEMPERAMENT.

The principal characters by which this temperament may be known, is that the person is highly susceptible of moral and physical impression, and secondly, when in a morbid state, the solids of the body exhibit earlier and more marked signs than the fluids, and in general the muscles are lax. Sydenham has noticed that in a well-marked nervous temperament, the susceptibility is so great that affection of that system are by sight capable of being propagated, as infectious complaints are from one person to another, whether they be of a moral or physical character, and after being once engendered, and even cured, still they are brought on again readily by

favorable circumstances. The nervous temperament may be considered of a complex nature, since it influences the sanguinary, the choleric, the melancholic, and the phlegmatic ; hence its importance, as influencing man both physically and morally in health and disease ; therefore he must be viewed in relation to the influence of this element in his structure, both in a state of health, and particularly so when in a state of disease.

In this constitution, the sentient system predominates, and there exists a great susceptibility to all external impressions. This temperament, when unduly or in a morbid condition, is often increased by sedentary habits, or too great an enjoyment of the luxuries of the table, without adequate exercise, and by indulging in fanciful ideas acquired by romantic reading, &c. The determination of a person of a nervous temperament is prompt, but only for awhile fixed in purpose, then to recede into an undetermined state ; their affections are also only warm for awhile ; they are selfish and fickle ; their sensations are vivid, but leave no impression.

The perfect subject of nervous temperament may possess much vivacity of conception, but no depth of judgment, and as wavering, fanciful, vain, abounding in mean jealousy, apparently very enquiring, by doubting and arguing in opposition every mode of reasoning, affecting to understand quickly, deep reasoning, adopting, however, the opinions of the last to whom they speak, whether they appeared at the time to concur, or oppose their views. Although good-natured enough in the common acceptation of the word, they make the most unsatisfactory patients, for they soon change one



plan of treatment for that of a new practitioner, however sincerely and enthusiastically they may have commenced with it. Their want of power to place implicit confidence in a medical attendant will often induce them to consult, in a surreptitious manner, one or two besides; in fact, an honorable practitioner can have no other satisfaction in attending them, beyond that of preventing their selfishness becoming their own or friend's ruin, by the expences of travelling to popular doctors of fashionable watering places, or become the dupe of some mysterious nostrum monger, whose arrogant and confident promises will finally, most probably take with such fickle persons.

Dr. Mason Good has observed that these temperaments or generic constitutions frequently pass into each other, and that consequently not one of them perhaps is to be found in a state of perfection in any individual. We, however, observe that nervous excitability seldom prevails in the sanguineous constitution, whose muscles in general are found to be firm and well developed, whilst they are indistinct and infirm in the nervous. There is no doubt but that temperaments very materially affect the general character of the countenance; yet we are not, from the apparent prevalence of distinctive character, merely to decide upon any temperament, or to form a rash and hasty judgment in regard to the principle of treating the ailment of any individual, without duly regarding the fact of one temperament running into another, and general distinctive signs of all; also the effects of education, which regulate the one that naturally predominates, or

it may be modified by the influence of another. Thus the restlessness of the bilious and choleric may be attuned to a phlegmatic state by the power of reason, and the audacity of the sanguineous checked by inspiring sentiments of true valour, and thus assume a complex form. If these points be rightly conceived by the medical attendant, it will enable him to render efficient service to the patient by the facility he will have in suggesting the most appropriate moral and medical treatment, which no man ignorant of the momentous facts could do.

We are not, however, to conceive that a nervous subject is necessarily a pusillanimous object, because even a person of vigorous intellect and of a firm and intrepid spirit, may be so nervous as to faint on losing a few drops of blood, or even from overlooking the operation of bleeding: such a case is published of an officer who gallantly led his companions in arms, and received severe wounds, and lost much blood without experiencing such qualms. This form is called the physical nervous, and another form is called moral nervousness, which is developed in the susceptibility of nervous affections from moral impression, and particularly shown in the bodily symptoms occasioned by timidity. There is a third form called intellectual nervousness. Here the patient may have the utmost steadiness of nerve, both physically and morally, and even a vigorous constitution, yet when certain intellectual energies are required, great nervous irritability occur, that greatly mystifies and injuriously interferes with the success of the intellectual operation then going on.

In the three classes or divisions, the peculiar form of nervousness necessarily varies in each individual according to the class of emotions to which he is most pre-disposed; consequently, it is not possible to point out the characteristics of this or any other temperament. Suffice it to lay before the reader the bolder tendencies of the several temperaments, leaving the more delicate and important task of distinguishing their several phases in the mixed forms to his power of detecting and arranging them into a legitimate form to rest upon with confidence his opinion, a qualification difficult to be obtained and impossible to be described. Since the nervous temperament is of all the most difficult to express in intelligible language, an example or two may convey to the mind a more favorable impression, particularly as that endlessly varied complaint, hysteria, is an appendage of it, often developed into action by moral, as well as physical causes. Distinction of causes, though difficult in many cases, is ever most desirable, since the removal of the cause will quickly leave only the habit of the disease to contend with.

A married lady of about thirty-five years old, after losing her only three children, gradually lost her health. Failing to recover her health through the aid of her medical attendant and others in her neighbourhood, she was recommended to take a tour on the Continent; she therefore, with her husband, proceeded to visit most of the celebrated spas, and on her return, those of her native land. When I saw this lady she was on her way home after three years' absence, to make, as she said, her last tour to meet her children, without entering into



the detail of the case, I found her looking exceedingly cadaverous and emaciated, and she informed me that she was occasionally severely afflicted with lancinating pains, limited to the top of her head, with stupor, giddiness and dimness of sight; these symptoms had invariably been deemed a determination of blood to the head, and said to threaten apoplexy, for which she was bled, leeches, cupped, and starved. At another time she had symptoms of diseased heart, with violent palpitation and difficulty of breathing, for which she was again advised to observe rigorously every lowering means, and subsequently salivated for pains in the bowels and tenderness, supposed to have depended upon inflammation; at other times the bladder was either too irritable, relieving itself so frequently as to destroy her sleep, whilst at other times it became so torpid that the use of a catheter was now and then deemed necessary.

Occasionally pains in the back or limbs were so severe that they were by some considered to be rheumatism, and by others, gout; these symptoms were continually changing, and in consequence of her migrating fancy, her medical attendants were also necessarily changed, each practitioner treating the symptoms as they happened to be at the time. When I was consulted the head-ache was severe, her bowels were exceedingly torpid, by no chance naturally relieved, consequently she was obliged continually to have recourse to purgatives, partly with a view to remove a sense of stupor and fullness that she experienced about the head.

These means were invariably found to increase the latter symptoms in about twenty-four hours to a most

distressing degree, producing mental excitement, followed by a sense of great exhaustion, flatulence, violent palpitation of the heart, and hot dry skin. The circumstance of her having the never-failing attendants upon nervous hysterical subjects, a cold pinched nose, cold fingers and blue nails, limpid urine at one time, and at another strong-coloured, offensive, and ammonical, with a changeable functional state of the bladder or kidneys; indeed, all the symptoms, and the state of her mind and temper, well assured me that the case was to be treated with due regard to her nervous temperament and upon soothing means.

In the first place I determined to allow a far longer suspension of the action of the bowels than accords with the general principles of practice in other temperaments, or than was comfortable to her own feelings, rather than expose her to the intense aggravation of her sufferings, that followed invariably the use of purgatives: therefore she was ordered to have the spine and bowels well rubbed for twenty minutes with a liniment of hydriodate of potash dissolved in spirits of rosemary and camphor mixture made warm twice a day, and to live upon such animal food as her own feelings indicated a preference, and to avoid all fluids, except hock or claret, and in order to relieve thirst and a clammy state of the mouth, I directed the use of a gargle composed of bicarbon of potash, which effectually decomposed the mucous secretion in the mouth, and thereby relieved the thirst: after eight days' suspension of the natural functions of the bowels, without much inconvenience they were naturally relieved with comparatively little palpitation

of the heart or tendency to fainting, and other distressing symptoms that succeeded the use of aperient medicine ; I occasionally substituted for the hydrodate of potash, the muriate of morphin in the liniment, to relieve the general irritability and local pains, and administered it internally with the utmost satisfaction, combined with either the sulphate of zinc, carbonate of iron, or bark.

Recourse was also had to tepid baths, together with friction, and in less than six months, the patient returned home quite restored in health.

In this case the constipated state of the bowels was somewhat irregular or uncommon, since we find generally that the bowels of a patient of the nervous temperament is subject to occasional fits of diarrhoea, with absence of bile, like that which attends a biliary temperament, and brought on by similar causes, as change of temperature, excess, or partaking of something disagreeing with the stomach or mental emotion, with, however, this difference, that the prostration during and after purging is considerable, often dangerous or fatal in the nervous, whilst in the bilious, although the prostration may be great during the attack, still he is quickly relieved afterwards. As a general rule, the biliary subject is benefited by mercury and purgatives, until the bile is evidenced in the motions, but a similar mode of treatment of diarrhoea in the nervous temperament is most reprehensible, since it endangers the annihilation of the patient. Here soothing astringents and stimulants are essentially requisite from the commencement, to stop the drain as quickly as possible, in order to lessen the subsequent exhaustion and possibly organic disease.



Some practitioners advocate invariably an aperient, before the astringent medicine is commenced with; neither one nor the other ought to be the invariable rule; in short only that justified by the temperament of the patient. In the nervous temperament, diarrhœa is easily excited, and generally as easily assuaged, if the remedy is appropriate and promptly administered, but the shock the frame sustains is invariably much greater to the nervous than to the biliary subject; yet the latter may have undergone a longer and more severe attack and discipline to be set right. The bilious patient will afterwards feel quite well, or better than before the attack, whilst the nervous patient will feel the effect more or less, for a long time after he is apparently cured; particularly if the attack was a severe one, or prolonged by injudicious lowering treatment; pains experienced in the head, both in the nervous and bilious temperaments, are characteristic; in the latter, they are dull and heavy, accompanied by a sense of a girth-like tightness around the head, whilst in the nervous, a lancinating pain is experienced, limited to a particular spot, and bursting from within, and readily excited.

Heat of the skin is common to both, and so is flatulence, but in the nervous, more oppressive, exciting pain in various parts of the abdomen, producing affections, simulating disease of the heart, lungs, bladder, or kidney, and many characteristic symptoms of hysterical affections. Inappetency is common to both temperaments, but in the bilious it seems in proportion to the patient's illness; and in the nervous, to nothing definable but atrophy. In fact, every organ is occasionally morbidly

affected, but when a certain excess of nervous irritation is apparently floating in the system, if I may use the expression—as occurs apparently in gout, for instance, it is difficult to say to what particular organ it may be concentrated, because it depends upon a variety of circumstances, such as age, the influence of the re-productive organs, temperament, and pursuits of the patient; the hereditary liability of certain organs to disease, the nature of the exciting cause, and many other minor causes, complicating exceedingly the cases, and rendering them often to assimilate inflammatory action.

Thus the affected part may be increased in temperature, swollen, red and painful, with an increased or diminished secretion, without inducing the concomitant changes in the capillary system peculiar to inflammation, rendering it often in some cases a difficult task to make a correct diagnosis; a point in all, of the utmost importance to direct a suitable treatment, since the method of cure is so diametrically opposite in the two affections.

To form a correct diagnosis of any particular nervous case, it is necessary to be familiar with the nervous diseases, as they generally appear in the three stages of life—infancy, manhood and decline. During infancy, we observe that convulsions frequently occur, and are generally acknowledged to be independent of the hemispherical ganglia; at this stage the mental phenomena is purely instinctive; indeed, the result of cerebral injuries before and after adolescence, proves a peculiar and great difference to exist in children; the result is scarcely more serious than a similar degree of injury to any other part

of the body, whilst injury to the adult proves most generally fatal, because the cerebrum and generative organs are both developed.

The late Sir A. Cooper used to mention, in his surgical lectures, that scrofula seldom or ever appeared in the infant until after he was weaned ; consequently, recommended suckling to be protracted as being more nutritious, and easier of digestion than the food usually provided for infants afterwards. That scrofulous symptoms appear after weaning most generally, is undoubted, but that they appear for want of due nourishing food, may be questionable, because the diseases of childhood are principally developed during dentition, as part of the progressive evolution towards perfection of the mucous, muscular, osseous and nervous systems.

If the general development be retarded from hereditary, natural, or accidental causes, so will dentition and other structures and diseases develop themselves, such as scrofula, rickets, hydrocephalus, infantine paralysis, &c., &c.

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## CHAPTER VII.

IN the adult, when the gradations of structure are more or less perfectly developed, a new set of phenomena appear, strongly marking the confirmation of the opposite sexes, and it may be readily observed that the male is less excitable than the female, and that convulsive affections assume a more definite type, epileptic in boys, and choreal in girls; chorea, however, is rare in young women, because it ceases after puberty, or is converted into hysteria; these fits must be generally regarded as symptoms co-existent with other deranged phenomena having a functional or anatomical relation with the re-productive organs.

Again, when the generative functions cease, so do these fits, or are converted into another form, as gout, insanity, specifically, but not generally different; thus each phase of evolutionary stages is characterized by some peculiar phenomena, less striking possibly in the young, middle-aged male, than in the female of similar age, because the irritability of the female childhood may be considered only to be checked in proportion as more vigorous vital powers influence the system, which becomes strikingly apparent so soon as these powers are depressed by either physical or moral causes.

The same rule of reasoning is applicable to man, particularly when his physical frame is not strongly developed, and then there exists a proneness to various paroxysms:

thus the stomach, heart, lungs, brain, and the nerves of the senses become functionally deranged, and in the female, together with the pelvic viscera, for we generally observe, that chlorosis is about the first disease that appears in a young girl, when the sexual organs are nearly or fully developed, accompanied by spinal irritation, which may radiate its baneful influence to various organs and concentrate upon the most debilitated or prone to disease.

In order to understand the various forms of nervous complaints, it will be necessary to take a general view of the nervous system, according to the modern views of physiologists. Pathologists have done much of late and established the truth that some nerves are exclusively agents for the performance of muscular action;—that some are destined solely for the transmission of sensations;—that others are agents both of sensation and voluntary motion.

Sir Charles Bell asserts, that the cerebro-spinal nerves are divisible into two systems: the symmetrical system, comprising the spinal nerves and the fifth pair of cerebral nerves, which agrees in having ganglia on one of their roots, and in being nerves of sensation and voluntary motion; and the respiratory or superadded system, comprising the par vagum, the portio dura, the glosso-pharyngeal, the spinal accessory, the phrenic or great internal respiratory and the external respiratory nerves, which arising by single roots from the medulla oblongata and upper part of the spinal marrow, have no ganglia at their origins, and serve for the office of respiration, connecting the internal organs of this function with the

respiratory muscles, and with the sensibilities of remote parts.

The physiology of the spinal nerves is of the utmost importance for the due comprehension of nervous and other complaints; I shall, therefore, take a view of the spinal chord; a great analogy exists in its structure with the larger nerves; it may be considered as composed of four columns of medullary matter, with a central portion of grey matter: and each spinal nerve is composed of two fasciculi, which originate, one from its anterior, the other from its posterior portion, on the same side of the medial plane; the anterior fasciculus, with the anterior portion of the spinal marrow, serving to transmit the influence of the will to voluntary muscles, and excite their contraction, while the posterior fasciculus, together with the posterior portion of the spinal marrow, are the medium through which the surface of the body is endowed with common sensibility, and through which tactile impressions made on the outside of the head, trunk and extremities, are conveyed to the brain. The two fasciculi, the anterior and posterior roots, unite to form a single nerve, which passes towards its distribution—possessed of the double property of transmitting sensations and of exciting muscular action; therefore, if the anterior root of the nerve be divided at its origin, while the posterior-root is uninjured, motion will be lost, and the part will retain its sensibility, and on the other hand, if the posterior root be divided, sensation is lost, but the power of motion remains.

In like manner, divisions of the spinal cord paralyses the part below the section, while that portion, which is



continuous with the brain, retains the exercise of its powers. The section or compression, of its anterior portion above, deprives the subjacent parts of motion and that of its posterior portion deprives them of sensation. Notwithstanding these are the usual consequences of direct violence to the nerves; there are, however, many cases on record, varying with these general rules. M. Royer Collard relates a case of muscular paralysis of the inferior extremities, with preservation of the sensibility, in which, after death, the anterior portion of the spinal cord was found softened and disorganized, whilst the posterior portion was unaffected by the disease; and M. Serres relates another in the "*Archives de Medicine*," of a man who had complete muscular paralysis, with increased sensibility over the whole surface of the body, but in this case, paralysees had existed for some time, and after death, the anterior portion of the spinal cord between the sixth cervical and third dorsal vertebræ, was found softened and disorganized to the extent of three inches and a half—the posterior of the same part was slightly altered to the extent of one inch.

Mr. Stanley related in January, 1840, to the Royal Medical and Chirurgical Society, and reported in the *Lancet*, an interesting case at variance with the doctrine of the distinct influence of the anterior and posterior columns of the cord, on the faculties of motion and sensation. "The disease, which was not the result of any injury, commenced three years before the patient was admitted into St. Bartholomew's Hospital; with impaired motion of the lower extremities: at first slight, but progressively increasing, so that at the time of his

admission, he could only succeed by a great effort in raising his legs from the ground while sitting in a chair. Before the patient's death, the inability of motion became complete in each lower limb, in its whole length. In no part, however, was there any defect of sensation confessed by the patient, whether the skin was scratched, pricked, or pinched; and there was no difference either in the temperature or the nutrition, of the lower and upper parts of the body.

“On dissection, after death, no signs of disease presented themselves, except in the spinal cord. Here, contrary to anticipation, no disease whatever was found in the anterior columns of the cord. An extensive change of structure and colour was, on the contrary, manifested in the posterior columns from the pons to the lower end of the cord.” The value of the case, Mr. S. said, consists in the distinctness of its phenomena. At the same meeting, Dr. Budd related a case of a man admitted into the Dreadnought Hospital Ship, with posterior curvature; the dorsal vertebræ, from the fifth to the ninth were carious. There was a complete loss of power in the lower extremities, while sensation was unimpaired. He continued in this state until his death, when it was discovered that the posterior columns of the spinal marrow were nearly diffuent from disorganization, while the anterior columns were scarcely altered in structure.

About twenty years ago, Dr. Rullier and Dr. Ollivier published similar instances. These anomalous cases prove puzzling to Bell and Magendie's doctrines of distinct influence of the anterior and posterior columns of the cord, or at any rate, until we become acquainted with

the use of the white part of the spinal marrow; for the supposition that it only partakes of the functions of the nerves arising near it, and that it might be injured without the grey substance from whence the roots of the spinal nerves are known to have their origin, is improbable.

An important character and one calculated to be of great service in diagnoses, has been pointed out by Dr. M. Hall, as distinguishing paralytic affections dependent on disease of the nerves themselves, from those due to lesion of the nervous centres. He has found that when nerves are cut off, either in experiments or by disease, from their connection with both spinal marrow and brain, the muscles which they supply gradually lose their irritability; while if the paralysis depend on lesion of the brain or spinal cord, so that the nerves, though no longer subject to the will, are still connected with a part of the central organs; the paralysed muscles not only do not lose their irritability, but are excited by galvanism to stronger contractions than the corresponding sound muscles. Dr. Hall shews that in this way, we may distinguish between paralysis of the face from cerebral disease, and paralysis of the facial nerve; between hemiplegia of the arm or leg and disease of the nerves of those limbs; between disease of the spinal cord in the dorsal region and disease of the cauda equina in the lumbar region, &c., see Dr. Hall's Papers, vol. xxii. of the Med. Chir. Trans.

The following cases, however, support the theories extracted from the *Lancet*, dated 18th of September, 1841, related in an abstract by Mr. T. Moore, the highly



talented late secretary to the Dublin Medico Chirurgical Society. Mr. Moore saw the patient whilst he was at Paris, at the Hotel Dieu, under the care of M. Rostan in the month of June. "The patient was a robust Frenchman, with a disease which was ushered in by an intense burning or scalding sensation, noticed first in the right leg ; this burning heat in the limb was accompanied and succeeded by impairment of the sensitive functions, but not of the motor powers. In the course of a few days, he experienced the same sensation of burning heat in the opposite or left limb, which was accompanied by debility of the muscular energies, converted in a short space of time into total loss of motion, but not the slightest deviation from the normal state of sensibility.

Thus for several days, the state of the two inferior extremities was diametrically opposed ; in the one was complete motion without the slightest detriment to sensation ; in the other, total annihilation of the sensitive functions, with preservation of the motor powers.—Under these circumstances, in accordance with the theories of Sir Charles Bell and M. Magendie, the diagnosis of inflammation and probably softening of the anterior spinal columns, for the left limb (loss of power not of sensation) was formed ; whilst a similar affection of the posterior columns was diagnosed, to account for the state of the right limb, there being a loss of sensation not of motion, the inflammatory process having in all probability commenced in the posterior columns, and extended to the anterior. During this period, his mental faculties and different senses remained perfect, having

undergone no alteration; the pulse was quick, skin hot, tongue loaded, and other symptoms of fever well marked.

These phenomena continued unaltered for three or four days, at the termination of which, had death taken place, a pathological specimen would have been obtained confirmatory of, or contradictory to, the physiological experiments instituted to ascertain the functions of the spinal cord; but in consequence of the disease progressing, the functions of the sensation and motion, so well marked in the lower extremities in a single form, by degrees became less defined; the line of demarcation between the integrant and impaired function, in either limb became less distinct, until by being completely nullified, paraplegia was the consequence. Towards the termination of the case, the diaphragm, intercostals and abdominal muscles participated in the disease, having lost the power of contraction from paralysation of their action. On the fifteenth day of his illness he died, in the preservation of his mental powers almost to the last hour of his life. On slitting open the dura mater of the spinal cord, it was observed that from about the first lumbar vertebræ to the fifth or sixth dorsal, the consistence of the structure of the spinal marrow had advanced to such a degree of softening as to form a different pulp, in colour and fluidity somewhat resembling thick cream, so that when raised on the blade of the scalpel, it escaped in drops. From these appearances it was conjectured that the spinal cord had undergone the process of suppuration, or that infiltration of purulent

matter had been diffused through its softened structure.

The origins of the sensitive and motor nerves, or, perhaps, in more strictly anatomical language, their terminations, were involved in the disease, and reduced to the same pulpy softening as the structure of the spinal cord.

The superior part of the spinal marrow and cauda equina preserved their consistence, as also the cerebellum and cerebrum, some slight vascularity of the pia mater existed, that portion of the theca corresponding to the disorganized condition of the spinal cord was somewhat more opaque and increased in density than that above or below; a very small quantity of fluid was found in the ventricles.

Notwithstanding this case is highly satisfactory in support of the new theory, as well as many others that are recorded; still we must admit that there are authenticated cases published by various practitioners as yet inexplicable, through the paucity of our present knowledge even with the aid of Dr. Hall's discovery, it will prove difficult, particularly to explain the effect of a slow progress of disease, in producing symptoms infinitely various in character and degree, and often so remotely from the seat of their cause as to be difficult to trace the links of nervous connection; for we must regard the office of the spinal cord as that of nerves in general, viz., a medium for the transmission of nervous influence to and from their origin. Thus when there is irritation or inflammation of the spinal cord, for instance, in the lower part of the dorsal vertebræ, the pain may be felt at a distance from the spine, possibly in some part of the



thorax. This distant pain is certainly connected with the distribution of the sentient extremities of the affected nerve, and is felt where the nerve is ramified.

Therefore, as a general rule, we understand that organs supplied with nerves from a higher part of the spine than the seat of disease, are seldom affected, and in slight cases of pressure, the thoracic and abdominal organs which derive their nervous influence from below the distortions, are but little disturbed. Symptoms in these cases of subluxation or pressure are principally confined to the lower extremities and the viscera, which receive their nerves immediately from the spinal curve, and sometimes when a slight pressure comes on gradually, no inconvenient symptoms follows, whilst in other cases a most distressing kind occurs, nay, even where no curvature has taken place, but simple irritation, implicating remote organs by sympathy or reflected influence of the spinal nerves, which are distributed to all the abdominal and thoracic organs to the sanguiferous system, to the upper and lower extremities, to the trunk of the body, the neck and outside of the head, &c. Hence we may reasonably apprehend, upon anatomical and pathological principles, that such vast distribution is capable of producing, either directly or indirectly, an endless train and succession of perplexing symptoms, which from their obscurity of origin and obstinacy of control, have been justly ranked among the *opprobria medicorum*.

We have also, in addition to physical causes acting morbidly upon the nervous system, moral causes exciting an extensive train of very distressing nervous affections, and occasionally, when sudden, even death, which is

often attributed to apoplexy, but not with so much probability as if we attribute it to the spinal marrow interrupting the nervous current, with the great sympathetic, and par vagum. Thus we observe the less serious consequences of sudden moral and mental impressions, to be paleness of the face, shaking of the knees, agitation of the tongue and respiratory organs, fainting and convulsions; when either of the latter effects terminates in death, *post mortem* examinations point out nothing satisfactory to explain the immediate cause. The opinion has perhaps arisen from always contemplating the brain as acted upon by the circulation as the principal source of nervous energy, and the spinal cord, in comparison, more or less subordinate, and never reversing the order of review, or regarding sufficiently that the animal functions operate in a circle, so that the obstruction may begin in any part, and may thence be communicated to the rest, and these may injuriously re-act upon the original portion without producing any perceptible change in any organ; consequently by ocular demonstration, we are more able to understand the manner in which a vital organ is affected in disorder, than we are able to comprehend the mode in which its function is carried on in health; hence there is every reason to believe that many cases of hemiplegia and paralysis, which have been considered to depend upon congestion, effusion, or structural change of the brain or spinal cord, have in reality been merely of a functional nature, the nervous power being directly affected independently of the circulation, as is the case in

certain local paralysis, arising from moral influence or the action of certain metals as lead, &c.

Again, we have nervous apoplexy, terminating instantly in death, yet no appreciable lesion has ever been formed to account for death. Andral notices in his "Cours de Pathologie" that M. Lelut, physician at Bichêtre, "on opening the bodies of paralytic individuals could not detect any lesion to account for the paralysis;" and Müller says that paralysis takes place when the brain and its nerves are perfectly healthy, and many other eminent morbid anatomists very properly admit that paralysis may exist without producing appreciable lesion, so may local or diffusive, transient or permanent nervous pain or irritation exceedingly distress or destroy the patient without leaving morbid signs after death. Signs or symptoms, therefore, are only known to us during life, and their diagnosis from those attending inflammatory action, is confessed to be somewhat delicate, but of the utmost importance, as regards the welfare of the patient and the reputation of the physician. Loss of voluntary and involuntary muscular power often result from pressure upon the *medulla spinalis*, arising from disease located in one, two, three, or more vertebræ, either in the cervical, dorsal, or lumbar regions. These bones, when so diseased, are liable to be protruded a little above their fellows, making an elevated ridge, denominated by the late Dr. Harrison, "incomplete luxation or sub-luxation." It may be detected by attending to the varying forms of the spinous processes; this irregularity in the height, distance, or lineal direction of particular



vertebræ in respect to others is undoubtedly produced by elongation of the ligaments of the spine.

When Dr. Harrison published his opinion that the spinal column became occasionally incurvated in consequence of incomplete or sub-luxation of the vertebræ, as he described the cases, to arise from lax or elongated spinal ligaments, he was as much ridiculed for it as he was for the means he adopted to cure them. I will, therefore, mention a few well-authenticated cases of complete dislocation of the vertebræ without fracture, ere I relate cases of sub-luxation occurring without disease in the vertebræ.—Sir A. Cooper, Delpech, Boyer, and other eminent practitioners have denied the possibility of a complete dislocation of the vertebræ without fracture; there are, however, several well-authenticated published cases. Dr. Watson, in his admirable lectures, mentions a case that occurred at St. Bartholomew's Hospital, and Mr. Lawrence has published a case that ought to convince the most sceptical. Sir Charles Bell has also published a case of complete dislocation of the last dorsal from the first lumbar vertebræ, with entire division of the spinal cord.

Professor Rust has also recorded a case of dislocation in the cervical region, which was replaced by himself. Mr. S. S. Stanley, assistant surgeon of the Royal Hospital, Hasler, has published in the "Lancet," in the first volume for 1839, page 786, a most interesting case of perfect ankylosis of the five superior cervical vertebræ and complete dislocation backwards of the fifth from the sixth without fracture, from falling backward on his head on deck. "This man complained im-

mediately afterwards of severe pain in the back part of the neck, and between the shoulders, and of pain and numbness in the arms; his face was pale, and his pulse weak; five grains of carbonate of ammonia were given to him, and he was worse next morning; when he was removed to Hasler Hospital on the 21st of July, 1838, in a state of perfect consciousness, no wound, no external appearance of bruise—both arms are commencing to be paralytic—the left the most so; he has not passed urine, nor have the bowels been opened; the pulse is slow, weak, and oppressed; pupils unaffected; nor does he refer to any complaint, save about the muscles of the neck and shoulders. His breathing is undisturbed, catheter introduced, senna draught at one—enema evening; a free evacuation from the bowels, pulse up and sharp—repeat enema—bleeding, 20 oz.—22nd, respiration is hurried; the pulse is weak; there are continual attempts to expectorate; a frothy mucous, but the attempt is ineffectual—is most anxious to inhale air;—he desires to be raised higher—higher still!—Repeat enema; calomel six grains; jalap twenty grains, to be taken at once; urine to be drawn off by the catheter. Noon, he is easier,—he breathes more uninterruptedly; but the pulse flags;—evening, respiration laborious;—death is approaching—died at half-past four o'clock, a.m., of the 23rd;—55½ hours after the accident.

#### POST MORTEM EXAMINATION.

From the occiput to as far as the sixth or seventh dorsal vertebræ, there was considerable ecchymosis, and

in making a section of the integuments and subcutaneous cellular tissue, a quantity of blood was found effused into its texture. In prosecuting the dissection further, a careful examination exposed to view a considerable displacement backwards of the fifth from the sixth cervical vertebræ. The little finger could easily be passed underneath it into the spinal canal; the body of the fifth pressed severely on the spinal cord, and rested on the laminæ and spinous process of the sixth cervical vertebræ. The spinal column was now removed (sawing through the angles of the ribs) at the seventh dorsal vertebræ. It was then ascertained, beyond all doubt, that the injury was a complete dislocation *without fracture*. The ligaments and intervertebral substance were all ruptured, and when suspended from above, the parts were held together by the vertebral arteries and spinal marrow, with its theca alone, the theca vertebralis being uninjured.

#### HEAD.

The cranium thick and very heavy; the medullary substance of the brain was soft and very vascular; the brain having been removed with difficulty, it was ascertained that the foramen magnum was so much contracted, as scarcely to admit the point of the little finger. On closer inspection, the constriction was evidently produced by the odontoid process of the axis being much larger than natural, and projecting in a conspicuous manner upwards, towards the base of the brain, and backwards on the medulla oblongata, which, from the



little that was attached to the pons varolii, appeared small and nearly flat. A section of the base of the cranium was now made for the purpose of ascertaining the exact condition of the odontoid process, and the ligaments in this situation. It was now ascertained, that the whole of the cervical vertebræ, from the atlas down to the seat of dislocation, were completely ankylosed. Not the least vestige of ligamentous structure could be observed, with the exception of the capsular and occipito-atlantal ligaments; the capsular ligaments, and synovial membranes, when cut into, were found to be so much thickened and altered in structure, as more to resemble cartilage than ligament. No trace could be found whatever of the apparatus, ligamentosus, and alateral ligaments, connecting the occiput with the atlas.

Mr. Stanley remarks that this man could not turn his head on either side without turning his body to do so.

Ehrlich has recorded a remarkable case of dislocation of the atlas, wherein the articular process of the second vertebræ projected on the left side; he reduced the dislocation by extension of the head, while he forced back the atlas, and bringing the second vertebræ forward; thus he effected the replacement with a snap, thus he recovered immediately, sensation in his limbs, and the respiration and the pulse were improved; the next day, consciousness returned, and he was able to hold his head from falling on either side, and in ten or twelve days he quite recovered. Many other cases are recorded of dislocation without fracture of the vertebræ; I shall, therefore, proceed to make the following remarks

upon subluxation without fracture or disease of the vertebræ. Elongation of the spinal ligaments is supposed by some practitioners to be impossible from their texture and use being essentially inelastic.

Yet Celsus has noticed in his writings how easily the joints of the shoulder and lower jaw become dislocated, and all practitioners, since his time, have observed the same, and admitted the reason to be elongation of the ligaments, and consequently their lax state favouring partial or complete luxation of those joints, as occurs in those of the spinal column under certain circumstances ; for the joints of the spine, like others of the frame, have their capsular ligaments, tendinous cords, and membranous expansions for their firm support, to this membrane, the muscles destined to move the spine in all its varied motion are attached, and not immediately to the vertebra ; hence luxation by the action of the muscles in weakly habits by overstretching it at some vertebra which gradually slides out of its place by the continual tendency of every action of the muscle attached over that vertebra, and similarly extending to others, or a certain number at the same time. This fibrous articulating structure is ever very slow to recover its tone.

The articulating ligaments, the common posterior ligament, and the tendinous expansion of the muscles of the back render the vertebral column peculiarly liable to attacks of rheumatism, under which affection, the muscles become quiescent from an inherent law of sympathy with their tendons and the fibrous texture into which they are inserted. When the muscles on one side of the spine only are so influenced, the opposite healthy muscles draw

the spine to their side, whilst the affected muscles are extended passively over the curve, thus favouring distortion in a predisposed subject by the vertebra being more easily drawn out of its line on one side, than when the muscles on each side of the spine are equally incapable of action; hence, probably, one cause of the greater number of lateral than ex and incurvatures.

Rheumatism probably institutes spinal irritation by one of its forms of attack: inflammatory, by causing the intervertebral substance to swell together with vertebræ and its ligaments, and probably extending to the spinal theca, thus compressing the spinal cord, and impeding the transit of its nerves and their energy; consequently occasioning various sensations, such as heat, cold, numbness, loss of feeling and motion of the limbs, or paraplegia of the upper or lower extremities.

Relaxed condition of the spinal ligaments may come on without any apparent cause, or from inherent general debility, or that following a long illness or some active disease, for which severe depletory means had been pursued for its subjection; certain it is that the vertebræ and cartilage do not appear to be implicated in disease, but the vertebræ become displaced so gradually as not to excite symptoms to lead to its detection, until a long time after its displacement, as consequence of its relaxed ligaments. This fact was denied by most authors preceding Dr. Harrison's published opinions; yet Mr. Pott admitted that he found disease in the ligaments, without apparently any in the bone, and says at page 438, "I am of opinion that we shall for the most part find it in the connecting ligaments, which seem to have lost their



power of holding the bones together ; these get relaxed, and suffer a single vertebra to become slightly displaced ; the column now losing its natural firmness, other bones are pressed unduly upon the surrounding ligaments ; they, in their turn, become relaxed and elongated, by which dislocation extends, and the distortion becomes permanently established.”

Mr. Pott did not consider that a curvature could be cured, as it is now readily effected, without issues, cupping, blisters, or any other painful remedy or means. He says at page 478, 491, “ that when two or more vertebræ are affected, forming a large curve, however perfect the success may be with regard to the restoration of health and limbs, yet the curvature will and must remain, in consequence of the union of the bones with each other.”

That a displacement of a vertebra or more occurs as consequence of elongation of the ligaments, without disease of the bones, cartilages or bony union in young patients, we are well satisfied of the fact, as we are that ligaments of other joints become elongated or relaxed.

Mr. Chessher’s plan of stretching the spine, from one to three inches, which is very readily done, proves that bony union is not a usual attendant upon these cases, and that ligaments are elastic. Mr. Chessher’s plan was by some means much praised at the time ; certainly his cures could never have justified the commendation that was awarded to him, because the good that was derived from extension was lost by the relaxation that was allowed to follow. Mr. C.’s plan is still adopted by some practitioners, more or less modified ; it consists in wearing a steel

collar, which conveys the weight of the head upon the hips, and which presses below the loins by means of various steel plates; thus they are kept in the recumbent posture for some hours, and stretched by pulleys attached to the neck collar, and the hips, or to the neck collar alone, suspended from the ceiling of the room, just allowing the toes slightly to support the body on the ground. Thus the patients were treated daily by alternating extension and relaxing the ligaments of the spine, and allowing the patients to walk. Such principles never can be successful in a single case; the weight of the head must be taken off, by keeping the patient continually lying down, together with stretching and pressing the displaced vertebræ three or four times a week, and having a shield around the body tending, in its constant action, to produce the same effect. Thus together, by dividing subcutaneously the muscles that either originally produced the curvature, or tend to keep it up, I can insure the restoration of the spine to its straight line in every young patient, because in them the curvature is the result of relaxation of the ligaments from undue action of some muscles without any disease of the bones; ample experience has confirmed these facts. Curvatures of the spine are exceedingly common, more or less in degree without producing any inconvenient symptoms, whilst in other cases it excites numerous complicated nervous symptoms that harass many of them through life; for the cause is never suspected to be in the spine, and the latter is never examined, the subluxated vertebra is never replaced in its original lineal direction, though easily effected in

the first instance, and in all cases may in time be insured, and quickly to a degree sufficiently to prevent the spinal cord or a nerve being unduly pressed at its exit, to cause constitutional or local irritation in some organ to which the irritated nerves are distributed.

In nascent cases of spinal curvature, this subluxated form is decidedly most commonly met with in practice ; its magnitude, of course, will depend upon the number of vertebræ subluxated, and the disposition of the curve may become on either side posterior or anterior in any portion of the spinal column when the curvature is very inconsiderable—nay, when one vertebra forms a slight exception in the regularity of the spinal line, either by height or distance from its fellows, a serious train of nervous symptoms may supervene that are not particularly distinguishable from those arising from other causes ; consequently are attributed to any other source, whilst the true cause is wholly overlooked and neglected.

The incipient stage can only be detected by a practitioner having acquired, by frequent opportunities of examining such cases, the nice and discriminating eye and touch to detect, readily, any abnormal condition of the spinous processes, as regard their relative height and exact distances from one another : disturbing the beauty of the spinal line and the delightful sense of health and vigour, by the consequent pressure upon some portion of the spinal marrow or upon the exit of some of the numerous pairs of nerves that arise from it, to communicate power of feeling and voluntary motion of the limbs and muscles of the trunk and head. These nerves, in con-



junction with the ganglions and the great sympathetic nerve, supply the sanguiferous system and the thoracic and abdominal viscera, with the principal share of their nervous influence; hence the importance of a healthy disposition of the spine to the well-being of the individual.

From Hippocrates, to the present time, authors have agreed that females are more subject to the nervous irritation, described by the ancients, as hysteria, than men. What is commonly regarded as hysteria is, no doubt, more frequently met with in females than in men; but the same cause of nervous irritation appears in men in a different form, and quite as often as in the opposite sex. The susceptibility to disease varies endlessly in different persons, according to their temperament, and certainly more actively than at any other period of life during the functional power of the reproductive organs, which ever appears to co-exist with the perfectd evelopment of the individual. Certain seasons are more productive of disease of the organs of the chest, abdomen, pelvis and of the skin than others. It appears reasonable to suppose, that the generative functions are in some way also implicated in the human species, as it is decidedly in all animals; none can have failed to observe the greater beauty of the plumage of birds, particularly of the male bird, during the breeding season, instanced in the common cock, the peacock, and pheasant; also brilliancy of colour may be observed in fishes, insects, &c., instanced in the mackarel and butterflies. During the generative seasons, when the more active diseases appear, and still more fatal ones during

the moulting season, although the ovaries and testes of birds and fishes are only particularly developed during the spring, and in other animals at other seasons, producing characteristic signs in all, either of the skin, hair, horns, tusks, or temper; the latter is generally observed to be resolute, although there is no particular season in which the human species have their generative organs particularly active; nevertheless their energies are modified, both in man, and particularly in the female, at certain times.

The lumbar portion of the spinal cord, by its nervous connexion with the testes and ovaria, is continually influenced and influencing these important organs; apparently the animal construction is determined by the organs which the lumbar nerves supply: for the osseous and muscular systems are developed, robust in the male, or more delicate in the female; hence possibly the different habits of the sexes.

Hippocrates and successive authors to the present day have noticed peculiar relations existing between the genitals, neck, throat and chest. Mumps is frequently transferred to the mammæ in the female, and to the testicle of the male; cough has been known to Hippocrates to cease on the testicle becoming swollen.

I have known a dry, troublesome cough to subside in a young girl when the breast became tender around the nipple, after which the menses re-appeared and continued regular, and the patient, who was supposed to be consumptive, having dry, harsh, hot skin, and very thin and flat-chested, with a disagreeable shrill voice, became healthy, with the usual roundness of a well-grown

woman, having smooth and soft skin, conjoined with a musical voice.

Hippocrates has also observed a tumour of the testicle to remove a shrill voice, which he says alone can alter this disagreeable defect in man. Sir Charles Bell has also proved that the nerves termed respiratory are influenced by the sexual organs, which implicate and comprise the external surface of the head, neck, and thorax, together with the viscera and the glands, and tissues of the face and throat.

Disease appears oftener in the lungs, heart, and blood vessels of man, than in the opposite sex, supposed, but not very probably, to arise from their greater capacity; but women are most subject to morbid affections of the thyroid and other glands, as the *mammæ uvula* and tonsils, occurring either during or after the generative period of life; thus proving a pathological relation between the lower end of the spinal cord and the organs of the upper part of the trunk—a fact that has always been observed, but never before explained.

It is true that the kidneys and abdominal viscera are apparently in equally close relation, yet evidently do not exert that influence upon them that is commonly observed upon more remote organs already noticed. Male organs of generation have a peculiar effect upon the confirmation and habits of the animal. The male animal is generally readily distinguished from the opposite sex, also from those that have been castrated, generally by their superior size about the head, neck and chest, or by the luxuriant growth of hair on the neck and shoulders, or by the tusks or horns. The castrated lion's mane does



not grow, neither can he roar. The bull, ram, and boar lose their voice, thickness of their horns or tusks ; the cock loses his power of crowing, and his beautiful vertical tail, feathers, and the combative form of his spur, his social habits and his pugnacious disposition to defend on his domain the exclusive right of polygamy. These several characteristics are modified in the females of the same species, and when a spayed heifer or a sow is compared with those not having undergone the operation, a marked difference exists.

Eunuchs, like capons, become fat, and have no desire to associate with the opposite sex, and court solitude ; they have no beard or whiskers, and have a repulsive squeaking voice. In Russia there is a sect of religious maniacs, who, I am given to understand, are all prosperous merchants, in consequence of the exclusive preference they give to one another in business. They believe that the world is so bad, that they consider it an incumbent sacred duty to oppose Heaven's first commands to increase and multiply ; although it is a palpable fact that the final cause of all vital action is the reproduction of the species, and the preservation of the individual. Some creatures seem to live for no other purpose ; for the male dies as soon as he has performed the generative function. Notwithstanding our knowledge of what people will submit to, under the influence of a barbarous religion, it must still be regarded as extraordinary that these people can and do receive into their society only young men who have their generative functions in force, and will be persuaded of the heinousness of the world, and the superior advantages of certain

riches in it, and forego the laws of nature, submitting to the dangerous and painful operation of castration.

Some time ago, I met at a rich merchant's table one of these *things*, for they are neither fish nor flesh; my friend, a married lady, who sat next to me, nearly opposite to him, could not help observing to me what an extraordinary looking person he was; when I informed her that he was a member of a religious sect of eunuchs in Russia, she appeared as much astonished as if our hospitable host had let into the room a Russian Bear. He was a tall, fat, flabby-muscled, greasy, pale-faced, beardless leuco-phlegmatic supercilious zealot of mammon, with the most unearthly voice that ever human being uttered.

I have noticed sufficient facts to shew that the generative organs have an extraordinary influence on the conformation and power of animals. The sexual principle in the human species ought to be assiduously studied and well comprehended by every medical practitioner, ere he can expect to be eminently successful in the treatment of nervous irritation in its various phases, because it is unquestionable that men and women are more subject to nervous affections, indigestion or hysterical pains, fits, &c., whilst the generative organs are developed or in action; hence, we often hear of young females after many years of suffering, suddenly recovering without any apparent cause—doubtless, the change often depends upon the subsidence or natural satiation of the generative irritation.

This explanation appears to me to be so constantly corroborated by daily observation, that any thing in the

shape of proof is unnecessary; but as regards the particular mode in which this system is affected, and the particular portions implicated in nervous irritation, such as indigestion, mental despondency, or such as are generally classed under the head of hysteria, there has been much difference of opinion. Some eminent authors have attributed their origin to the brain, others to the *nerves* in general, and others to the uterus, particularly the hysterical affections; just as if men were not also subject to hysterical affections; others, again, have with more reason, attributed the cause to the spinal marrow, its nerves and their ganglions; for it cannot be doubted, in consequence of our advanced knowledge in the anatomy and functions of the brain and spinal nerves, that ultimately, all generalizations, pathological as well as physiological, must be solely based upon the anatomy and physiology of the nervous system, and thereby treat more successfully those functional or organical affections of the heart, lungs, stomach, bowels, kidneys, bladder, generative organs, and the muscular system.

The spinal nerves which supply the vital organs of the thorax and abdomen, enter from behind the spine and a number proceed directly into the viscus to which they are distributed. Thus disease may be communicated from these different organs by the nerves to their source, as well as from the latter to their termination in various organs which derive their nerves from the spine. This mode is probably the most common; thus obstinate indigestion is established, and functional or organic affections of the liver, which neither general nor local bleedings, blisters, purgatives, and starvation, can speedily cure



without remedial means being applied to their source in the dorsal vertebræ ; then they will be effective, and upon the same principles as we find our remedies cure the ever-attendant sympathetic pain in the knee joint, when the hip joint is diseased ; indeed, during the incipient stage of diseased hip joint, the only inconvenient symptom experienced by the patient is that in the knee, and occasionally it is mistaken for the seat of the disease.

The late Dr. Brown asserted that affections of the liver in sympathy with irritation of the dorsal vertebræ, may be distinguished from those excited by other causes, through the circumstance of the patient feeling pain or tenderness in the spine, and in the ninth or tenth dorsal vertebræ, the pain will extend to the region of the liver. This pain, he says, is with few exceptions on the right side of the spine, and frequently proves a diagnostic error by assuming it to be caused by affection of the liver and stomach, because nausea is often present, instead of regarding it as sympathetic. Sir Charles Bell has proved that if we select a filament of a nerve of sensation, whether it be pricked or injured, in the foot, thigh, spine, or brain, the preception arising will be referred to that part of the skin where the remote filament is distributed. Müller and Combe have since noticed the same fact. Again, if an end of a cut nerve still in connexion with the general system be irritated, sensation is excited as if the terminal point on the limb had been irritated, and not in the part touched. Indeed it is a well known fact that one function of the spinal cord, as regards the sensitive and motor nerves is that of a conductor ; all irritation of a sensitive nerve,

whether in the brain or spinal cord, or even as far as its termination in the brain, must excite sensation referred to the peripheral point.

I may therefore conclude that each point of a sensitive nerve has the same properties as the peripheral extremity, and so far as regards consciousness, the powers of the central and peripheral termination of a sensitive nerve are identically the same. We have very important and novel views respecting the anatomy of the nervous system, ushered with much zeal and ability by Dr. Hall, termed excito-motory system, which is divided into two sets, the incident and reflex nerves. Dr. Carpenter has lately proved these nerves to exist in the *invertebrata*, and Mr. Granger has nearly satisfactorily proved them to exist in the spinal cord. These nervous movements at various former periods have been observed and termed according to the circumstances under which they were developed, as those of irritability or automatic, instinctive, and involuntary motions. They seem to be the consequence of vital mechanism excited into action independently of the will, consciousness, and even conscious sensation; thus then we have known that several vital movements of a definite character are performed without consciousness; we therefore readily infer that there are nerves with their corresponding centres, to which the laws of consciousness are not applicable, and which, probably, are the organs of physical sensation and involuntary motion.

The reciprocal action of the spinal cord and nerves of viscera has been uniformly acknowledged, and indeed, that irritation of nerves of one organ may be communicated

to those of a second having an anatomical or functional connexion; thus irritation of the nerves of the bladder being transferred to the spinal cord, will not only produce involuntary muscular action and pains about the pelvis in consequence of the sensory fibrils traversing the cord and coming from the skin, covering the perineum, groins, thighs, and orifice of the urethra, giving to the patient an impression that the disease is seated in some of these parts, and not in the bladder. Again, irritation of the intestinal canal, for instance, in children, from worms, may excite also by reflex movements, tetanus or itching of the nose and anus, sensation being felt at the junction of mucous and dermoid membranes; the transit of a calculus along the urethra will cause pain, retraction of the testicle and pains in the thighs, and an inflamed testicle will cause pain and weakness of the muscles of the loins.

When the bladders of men of advanced age are diseased, there is often experienced a painful heat and tenderness of the soles of the feet, and the latter symptom is also excited by a stricture of the urethra, accompanied by a numbness inside the thighs and pains in the loins. It is also common for patients to have cramps of the muscles of the legs during an attack of diarrhea, and particularly during the passage of vitiated bile. Cramp or tenderness of the calf of the leg is very common in symptoms of bilious derangement, although not noticed, as far as I know, by authors upon liver complaints. We find that when there is a disease of the spinal cord, the special sensation is often experienced as of tingling



or pricking sensation of the skin, with or without undue partial tenderness of it.

The catamenia are seldom established without neuralgic pain of the back and cramps of the lower extremities, and occasional numbness, with nausea or sick head-ache. Indeed, these and various other physical inconveniences are often experienced at each period by women enjoying during the intervals a tolerable good state of health; without any physical pains they are occasionally morally afflicted. Thus a woman of an impetuous and fickle mind in ordinary, becomes at these periods most distressing to herself and to those around her, by giving way to dissatisfaction and quarrelsome moods; even the amiable will occasionally become whimsical, irascible, capricious, and hysterical. Dr. Hall in his theory, makes the spinal nerves distributed on the skin to be the excito-motory nerves of respiration, and Professor Müller observes, that “the whole system of respiratory nerves can be excited to action by irritation of any part of the mucous membranes, from the mouth to the anus, from the nostrils to the lungs.” This general principle is applicable to the explanation of a great number of phenomena, particularly of those experienced by nervous people, in whose mobile frames, sympathetic sensations are so prevalent, because it is admitted and already noticed that at whatever point a sensitive nervous fibril may be irritated, the sensation is felt in the parts to which it is distributed, therefore the radiation of an impression upon a sensitive nerve in the substance of the brain or cord may affect the origin

of other sensitive nervous fibres so as to produce sympathetic sensations. Thus we may explain the singular march of erratic erysipelas, by supposing that the disease is caused by a morbid state of the centres from which the nerves of the part affected take their origin ; the same principle will explain many other neuralgiœa, functional, or structural disease of various organs.

We have no doubt that the various symptoms generally classed in females under the head of, and treated as, hysteria, are caused by the same principles as those classed in men under the head of indigestion ; the symptoms of both are numerous, varying continually in their seat and apparent character, particularly in their moral character, which may be daily observed in practice, and by comparing the moral symptoms of indigestion of young men described in the works of different authors, with those on hysteria in women. The physical character will be found somewhat different in men, in consequence of their greater power and hardier frame, and consequently less mobile and susceptible to nervous irritation, to influence morbidly the frame as by fits and pains ; but the moral symptoms will be found greatly to simulate in both sexes ; for instance, the excited or depressed spirits, variously modified, however, according to their respective temperaments ; but where the latter agree, the symptoms will be more characteristic in men. The physical symptoms are generally those referred to the heart, lungs and digestive organs.

In women, affections of these organs are less frequent and mitigated than in the opposite sex, whilst the cause

is the same ; but the effects are more diffusive in the female system, implicating also the generative and the intellectual organs by direct and reflex irritation of the dorso lumbar nerves.

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## CHAPTER VIII.

IN all nervous affections, there is reason to believe that an incidental action occurs upon the *sensitive* nerves in their course through, or termination in, the different cranial and spinal gangliæ, derived from the sensitive nerves of the whole of the mucous membrane, whether it be that of the viscera or glandular structures of the skin, and not merely causing sensations, but also increasing and diminishing the secretions of the viscera and altering their structure; also that the passions, the will, and other stimuli acting upon the sensitive fibres of the brain, can produce analogous effects. The cranial ganglia, although the organs of consciousness, are subject to the same laws as those which govern the other ganglia; in fact, the passions are dependent on them, and the whole series of combined spasmodic and convulsive affection as epilepsy, choreæ, and hysteria are seated in the same grand division of the nervous system, and dependent on the same general laws.

We can explain, by the application of this general principle, a great number of cases of local neuralgiæ, structural or functional diseases of a viscus, and the consequent change in the sensitive fibrils situate in, or arising from, the corresponding portion of the spinal column, and that their susceptibility of painful impressions is increased. It is thus that the various sensations of burning, pricking, and creepings experienced by

nervous people is explained, also pain in cases of diseased liver under the right shoulder, corresponding in situation to the distribution of the *sura seapula* nerve which passes through a bony or tendinous foramen of the same name. It is also on the same principle that pain in the left arm is explained in chronic disease of the heart and nervous pain in the intercostal muscles, back and chest, often as severe as *tic-doloureux* of the face, and occasionally mistaken for inflammatory action, and injudiciously treated by bleeding and other depleting means. Again, on the same principles, we may explain the secretion of acrid matter in the stomach, eructation and burning sensation generally denominated heart-burn, dry hot hands and feet, head-ache, and brown tongue, the usual attendants upon undue acrid secretion in the stomach, which is generally sulphuric acid, and occasionally muriatic acid. The same cause occasionally affects the respiratory organs ; thus head-ache, dreams of an unpleasant character, lassitude of the mind and body, are ushered in, severely distressing the patient.

I have frequently known patients who had been foiled by the usual practice to overcome undue secretion of acidity by the stomach, and similar symptoms as above described, to be readily cured by counter irritants over the dorsal vertebræ. This may be reasonably expected, because the stomach is freely supplied with nerves from the *par vagum* and splanchnic branches, and certainly the latter nerve predominates in its supply of nervous energy to that important viscus. Various branches that arise from the sixth, seventh, and eighth dorsal ganglia, and frequently another branch from a ganglion above or

below these branches, arise and descend obliquely, upon the sides of vertebræ to form the trunk of the splanchnic branch, either the trunk or the branches become irritated by contact, or sympathy with disease in the notches through which the nerves pass out of the vertebræ.

If the digestive organs become functionally or organically deranged from such a cause, recumbency, in addition to manipulation, is often necessary to overcome these inconvenient symptoms. In several cases I have, by this plan, succeeded in removing some distressing complaints of the digestive organs, after various other means had failed; also diseases of the thoracic organs, for the heart and lungs derive their nerves immediately from the cardiac and pulmonary plexuses; the latter is also supplied with nervous communication from the par vagum and great sympathetic nerves: hence we may readily comprehend the great influence of the spinal cord over the viscera, through the great sympathetic, and indeed all other parts, since no part of the frame is destitute of the influence of the spinal nerves, consequently no part is free from their healthy and morbid influence.

The spinal nerves run from the vertebræ nearly across the body; thus the symptoms attending irritated spinal cord, or of its nerves, in their passages along their course from the foramina vertebrarum, may be explained, such as dyspnœa, syncope, and cord-like tightness across the chest, weakness, numbness of the limbs, pricking pain, fits of burning heat or cold. However varied in degree these symptoms may be, they must be regarded as species of paraplegia, arising from a source of irritation, or from pressure upon the spinal cord, or its nerves above



the affected part ; for instance, in the cervical region ; when the upper extremities are affected, and in the dorsal or lumbar region, when the pelvic organs, or the lower extremities, are affected.

Spinal irritation is frequently, I believe, the cause of what is regarded as an irregular distribution of the nervous energy ; that is, nervousness developing itself in an infinitely varied form, although there can be but little doubt that nervous affections are occasionally but the effects of moral causes. Females are more particularly subject to painful spasm of certain muscles, or loss of their power, torpid bowels, and irregular action of the urinary bladder, together with total derangement of the functions of the womb ; considerable weakening drain, pain in the side and in the head, oppressive breathing, languor, lowness of spirits, and easily unduly excited, agreeably or disagreeably, with reference to the occasion.

These symptoms are decidedly more prone to appear in young ladies whose childhood has been devoted to the exercise of mental faculties, to acquire the usual refinements of civilized life, all of which are obtained in a comparatively quiescent state of the muscular system, rendering them in a high degree susceptible to nervous irritation, and more particularly when the cerebral faculties and womanhood are developed : then nervous disorders of a moral character are superadded, and exemplified in the occurrence of epilepsy, chorea, hysteria, hypochondrias, catalepsy, mania, &c. Although young men are comparatively exempt from these nervous disorders at the early age to which females are, still, at a later period of life, when the cares of worldly occupation prove

a source of cerebral excitement, it frequently engenders mental, and various forms of nervous disorders, together with functional and even organic affection of the stomach, &c.

Persons of peculiar temperaments are more subject to nervous affections and disease than others, as we have already described: yet, with our present knowledge, it is confessedly impossible accurately to describe and understand its due degree to constitute a normal state of an organ, or its undue degree to constitute an abnormal condition, or to trace throughout human life, the variable susceptibility of certain organs to be influenced by it.

A most important acquisition to medical science would be the explanation of what we daily observe in practice; the habit of certain organs to sympathize with each other, particularly when one is in a state of disease, together with the cause why they vary in degree of sympathy at different stages of life, and according to the nature of the disease. Little more than the fact is as yet known to us; therefore it seriously behoves us to make ourselves acquainted with the characteristic symptoms of excessive presence of nervous energy, in contradistinction of inflammatory action, and its natural tendency, under certain circumstances, to continue a nervous affection, or to terminate in inflammatory action, and consequent varied changes of organic structure.

To distinguish the symptomatic signs of insufficient supply of nervous energy to some organs, either as a consequence of its undue concentration in others, or from general depressing or local causes, and the modifying influence of the constitution upon nervous affections, is

of no less importance, since it inevitably would enable us to treat the cases upon scientific and probably more successful principles, or at least to avoid a serious therapeutical error, of treating one disease for the other. The superior success of a medical practitioner must necessarily depend upon his power of balancing intelligibly the greatest number of distinctive points of a case, and rest his opinion upon the greatest probabilities, and upon his judicious selection of remedial means, and his quick perception in detecting their benign or injurious effect.

The basis of superior perception in medical science must depend upon an intimate knowledge of anatomy, and particularly of the nervous system in a healthy state, ere it is possible to comprehend various morbid conditions of the brain and spinal cord, and their important nerves, which are directly, or by reflection, capable of producing most diseases which the flesh is heir to.

Since the spinal nerves are so numerous, and having still more numerous terminations, and contributing to the various ganglions to form a nervous circle with the cerebral nerves, to enable vital and less important organs to perform duly their respective functions, it cannot but be reasonable and necessary that we should examine with every care the spinal column, whilst inquiring into the nature and cause of disease, particularly that portion of it, from whence the disordered organ or organs derive their nerves.

Some portions of the spinal cord seem to be a source of disease more frequent than others ; the dorsal region and lumbar appear to be most prone ; and thirdly, the cervical, and lastly, the whole three regions may be



simultaneously affected; presenting symptoms of irritation of the spinal cord, peculiar to the three regions—cervical, dorsal, and lumbar, which have been pointed out by different authors. M. Ollivier has related in his able and practical work\* on the spinal cord, several interesting cases of spinal irritation that fell under his observation, wherein pressure on the spine not only increased the already existing pain, but also aggravated the concomitant nervous symptoms. He also notices, that when the irritation was seated in the cervical portion of the medulla spinalis, it gave rise to pain of a neuralgic character, sometimes acute, at other times chronic, either in the forehead, sternum, shoulders, or superior extremities, and when the irritation was in the dorsal region, the pain was accompanied by deranged action of the heart and of the respiratory organs and of the upper half of the digestive apparatus, palpitations, pleurodynia, with dry cough, pains in the clavicles and superior extremities, and when in the dorso lumbar region, it occasioned pains in the substance of the abdominal parietes, in the hypogastrium and urino-genital apparatus, cramps in the inferior extremities, and not unfrequently paraplegia of a partial or general nature.

Other authors agree with M. Ollivier, that symptoms vary according to the situation of the irritation in the spinal column, which, of course, may be present without any incurvation of the latter; nor is it necessary, that the affected organ should be opposite the tender point in the spinal column, since the spinal nerves may communicate directly or indirectly with distant organs; and

\* *Traité des Maladies de la Moëlle Epinière.* 1837.

again, disease may commence in an organ and affect the spine with irritation by sympathy through their corresponding nerves. I cannot agree with M. Ollivier that the term spinal irritation is vague, or that it depends upon vascular congestion of the spinal cord, or its envelopes, are of a transient and recurving nature, because such an effect would indicate neuralgic affections, rather than nervous disorders;—indeed, his preferred term “sanguinous congestion,” is attended, mostly, with paralytic affections without other nervous symptoms, hence the diagnosis between spinal irritation and spinal disease is easy.

In spinal inflammation, the pain is fixed to one point, and may be increased by firm pressure on the affected part. Inflammation is also attended by constitutional disturbance as fever, anorexia, head-ache, palpitation of the heart, dyspnœa, and great muscular debility, or temporary spasmodic contraction of the upper and lower extremities; the patient finds most relief in an horizontal position, and generally whilst in that position he is unable to move his limbs or raise his body into a sitting posture, although when erect, he walks about with tolerable facility. The diagnostic signs of the mild or chronic form from that of the acute, marks itself in the violence of the latter, probably ushered in by cold shiverings with or without trismus or tetanus, delirium, coma paralysis, or convulsions, restlessness, oppressive breathing, vomiting, quick pulse, involuntary discharge of fœces and urine; then it may naturally be inferred that purulent or serous effusion has taken place in the spinal cord, and that death is approaching to relieve the sufferer.

The chronic or mild form of inflammation may be distinguished from lumbago first by the latter coming on suddenly and confined to the muscles of the loins, pain being increased on moving the limbs, and by pressure on the muscles giving more pain than on the spinous processes, which is just the reverse in spinal inflammation: besides the muscles in this latter case are not so rigid about the back or painful in action, as they are during an attack of lumbago, nor is there any head-ache and constitutional disturbance that invariably attend spinal inflammation; the same diagnostic signs will serve to distinguish rheumatic affection of the muscles of any other part of the spine, from inflammation.

Scrofulous inflammation of any vertebræ, or of the intervertebral substance, or of the ligaments, is rather obscure, and the attending fever is low in degree, and the appetite is not much impaired; the pain is often only felt on pressure, or after the patient has been long in an erect position. These symptoms are characteristic of scrofulous disease, and with that peculiar aspect of such patients, the nature of the attack may be as readily detected in this part of the system as in any other.

The diagnostics between spinal inflammation and tetanus are not to be depended upon, although assumed by Drs. Ollivier, Martinet and others; because the fixed pain is deeply seated in the spine, and the spasmodic contraction, and rigidity of the muscles of the back, vary in degree, from slight inconvenience to that in which the body is thrown back, designated *opisthotonos*, a state common to both, and either form may arise from one



another, with trismus. In a case of traumatic tetanus the circumstance of the wound will point out the cause, but not necessarily to the distinction, as both may be present.

In spinal irritation, pain of the affected part is more variable, it frequently changes its situation, and occasionally, is totally absent. The skin becomes tender over the affected part, or a burning and itching sensation is experienced over a large space of the back, and occasionally all over the body.

Inflammation and caries of the spine, although it is not my present intention to treat upon these affections, yet as inflammation and caries may occur with or without curvature, it will be necessary to enumerate the symptoms common to both, and especially those attending spinal irritation, influencing, directly or indirectly, various structures, systems, organs, and their functions, which have been noticed by Lieutand, Parent, Duchatelet, Martinet, Ollivier, Shaw, Bampfield, Harrison, Serres, &c.

Inflammation and caries of the spinal column occur generally at a much earlier period of life than spinal irritation, and attacking both sexes, frequently, with or without a curvature. Caries of the dorsal vertebræ often exists when the following symptoms are present: a sense of constriction about the termination of the ribs, or paralysis of some of the limbs, or extreme torpidity of the bowels and of the bladder, amounting even to paralysis. The function of the sphincters of the bladder and rectum are frequently lost or much dimi-

nished, so that the urine and fœces are most inconveniently retained or involuntarily discharged.

The muscles of the back, and frequently of the lower extremities, become diminished in size, and lax in texture, and proportionably powerless to retain erect the vertebral column, for more or less time, consequently the patient relieves the spinal muscles, by either the horizontal position or by supporting the head on the hands, and the elbows resting on the knees in a sitting position. These symptoms are more particularly developed when the spine has given way at the lumbar and dorsal regions.

My talented friend, Mr. Skey, has very satisfactorily proved that a spinal curvature generally commences in the lumbar region, and that it necessarily forms another in the dorsal region to counterpoise its effect; hence he has adopted and practised an excellent operation of dividing the lumbar muscles, or rather their tendinous portion, on the concave side of the lumbar curve, which he observes very correctly, acts as a string to a bow. He says: "Disunite the sinewy band that forms the string to the bow, and the opposite muscle will compel the remainder to conform to the attitude nature herself has dictated, and, having effected this, it will itself resume the form and dimensions which the existence of a morbid necessity has required of it. The division of this obstacle is scarcely entitled to the name of an operation in surgery. It is effected by a pointed and nearly straight bistoury, which is introduced from the outer side of the muscular pillar across its external or cutaneous surface, and with which the surface only of

the muscle need be divided. The depth of the incision required is not more than the quarter of an inch, and the orifice no larger than just sufficient to introduce the instrument, perhaps a quarter or a sixth of an inch. The division may be effected in a few seconds. The section of the whole substance is not essential to the end required."

Again he says : " By this simple division all is obtained that the operation will effect, viz., an open path for further treatment, by the instantaneous removal of the greatest obstacle to the successful application of other and efficient remedial measures. Remove the lumbar curve, and the necessity for the dorsal one no longer exists. It is very true that it will continue to exist for a time, even in recent cases, and that it will require very positive and persevering treatment ; but the cause is removed, and the effect may in some degree be removed also, even in the more chronic cases of distortion.

" To attempt to remedy a dorsal curve, to the formation of which the lumbar vertebræ have greatly contributed, would prove as futile as for an architect to raise a straight pillar on a leaning foundation. The dorsal curve is the essential and natural result of the lower deviation, and, should the endeavour to remedy the dorsal curve be attended with success, this favourable result would prove inadequate to a final cure."

In this view of the primary cause of dorsal curvatures I perfectly coincide with Mr. Skey, as well as in the remedial means M. Geuren has first so ingeniously practised. Having assisted my friend Dr. Serny, and



personally performed the operation of dividing the inelastic tendinous expansions of the lumbar muscles in very many instances, I can confidently assert that these bands, although not the cause of curvatures in the lumbar or dorsal regions, are the principal agents in keeping up the deformity, and in resisting the mechanical means to overcome it; yet their division will not cure a curvature, but confessedly will greatly aid appropriate mechanical means, and save about one-third of the time that would be required to cure a patient without it.

I must beg to apologise to the reader in thus digressing from my subject, but the importance of subcutaneous operation will be, I hope, deemed a sufficient excuse.

When a curvature of the lumbar and dorsal portions of the spine is established, the position of the ribs, sternum, and the muscles of the chest, together with those of the abdomen and pelvis, become functionally deranged, affecting the respiratory, peristaltic urino and genital organs, in consequence of the shortening of the spine lessening their usual line of action, impeding their power of contraction on one side of the spine, and over-extending those on the other side. All these inconveniences are, however, greatly modified by time, in consequence of the muscles accommodating themselves to their new condition.

The same deviation from the natural form of the spinal column that interferes with the exterior muscles of the frame, must also affect those of the interior, as the diaphragm and intercostal muscles; the fibres of the latter in the lateral form of spinal curvature lie nearly

or totally in contact on their posterior and lateral portions; thus their muscular fibres become shortened and incapable of elevating the ribs during inspiration, so again from the altered form of the cavity of the chest, the fibres of the diaphragm, in a natural condition, proceed from their attachments round the false ribs, sternum, and vertebræ, to the tendinous centre, somewhat like radii, from the circumference to the centre of a circle; therefore when the sternal extremities of the ribs are projected forwards, and the vertebral extremities drawn backwards, the form of the cavity of the chest becomes more or less diametrically changed; consequently the fibres of this most important respiratory muscle become like the rest—either too much extended or relaxed to perform their usual functions of dilating the chest; hence the oppressive breathing, irritable bronchial tubes, cough, and undue secretion of mucus, and susceptibility to head-ache, catarrhal, and inflammatory attacks, in consequence of want of space for the lungs to expand, in order to oxydize the carbonised or black blood, invariably a cause of quick breathing from whatever cause.

The form of the lungs becomes altered according to the altered form of the bones of the chest, and the heart, from the same cause, is likewise affected, either immediately by pressure, or in sympathy with the deranged functions of the lungs. These two important vital organs are peculiarly prone to sympathise with one another; and certainly the heart appears to be most susceptible to functional derangement and disorganization. Thus the heart, from its increased irritability,

acts with violence, and its muscular coat becomes enlarged and stronger than usual, as the muscles of the arms do, for instance, by rowing. This enlargement is not necessarily a diseased state, although the cause of its enlargement may eventually establish disease in some of its valves or cavities ; but its increased size in a contracted space, tends to produce cough, oppressive and quick breathing, or any particular disease to which the patient's constitution is most predisposed. If the enlargement is confined to one cavity, for instance, to the right ventricle of the heart, hæmoptyses may occur. Under this circumstance we generally find that the pulse remains regular, because it is the left ventricle that regulates the pulse. And again, on the other hand, when the left ventricle is hypertrophied, disease of the large blood-vessels may be established, or in the brain, or in some other organ, in consequence of the undue force with which the blood is hurriedly propelled.

The vital fluid, when thus hurried, does not fully undergo its necessary accustomed changes in the lungs to nourish and repair the body ; consequently morbid consequences will be marked in proportion to the time or degree of morbid action, the primary source in the spinal column. An inconsiderable disturbance of the spinal marrow, suddenly produced, totally deranges its nervous functions, though it is not sensibly injured when the changes operate by slow degrees ; nature cannot bear sudden alterations, but may be habituated to them gradually, without producing, at least comparatively, consequences so serious.

The muscles of the upper extremities are also sometimes



affected from the same cause with numbness ; subsultus tendinum, and even chorea and convulsions, are occasionally ushered in.

When the lumbar vertebræ deviate from the mesial line anteriorly, the effect of the pressure on either the bladder, uterus, rectum or prostrate gland is very injurious, by obstructing their respective and important functions ; particularly during parturition, the contracted brim of the pelvis will necessarily arrest the progress of the child, rendering instrumental aid necessary, to save the life of the unfortunate mother.

Disorganization of the bones of the spine, and their intervertebral cartilages, will not here require a full explanation, since the purport of the present treatise is to illustrate the consequences of spinal irritation, accompanied or not by such affections ; suffice it to say, that the destruction of the spinal column is accomplished by two modes ; first, by caries, or ulcerative absorption ; second, by progressive absorption, the result in general of that slow scrofulous inflammation which peculiarly invades the cancellous structure of these and the articulating extremities of other bones of joints, causing the absorption of their earthy matter, and rendering them light, soft and spongy ; after which caseous matter is occasionally deposited in its place, whilst in some instances the bones, from chronic inflammation, become singularly hard, heavy and brittle.

Caries may commence in any part of the vertebræ, and extend to the intervertebral cartilage, or commence in the latter and extend to the former, before any curvature of the spine is established, which takes place after

one or more vertebræ, or intervertebral cartilage, is partially or wholly destroyed. An incurvation may also take place when the intervertebral cartilage and ligaments become morbidly relaxed, and elongated, or from being compressed on one side, or from debility of certain muscles, or habitual inclined gait, or possibly by necessitous position of occupation; yet by neither of these circumstances, and but very rarely by any other cause, is the spinal marrow compressed, destructive to life; it appears that so important a structure to life, is by some incomprehensible and admirable law of the all-wise and merciful Creator, protected from deposition of bone, either to supply the place of an absorbed vertebra, or for the purpose of anchylosing the weakened vertebræ to another. In short, we observe invariably that the bony case of the spinal canal is the last portion that yields to, or is destroyed by, ulcerative or progressive absorption, in consequence of the spinous or transverse processes becoming anchylosed. Thus a bony continuity of the canal is maintained, and moderate defence to the medulla spinalis and nerves. Hence the importance of quiescence, to produce so desirable a change under such circumstances.

When a spinal curvature exists, the spinal cord must be drawn into the same form as the spine; therefore its fibres on its convex side must be more extended than those on its concave side, subject also of being pressed and diminished in size where the canal is contracted. The spinal nerves are occasionally dangerously pressed by deposition of bone around their foramina, although perfect obliteration of their foramina and destruction of

the nerves very seldom occur ; but the pressure may cause irritation or inflammation of the spinal cord, or of certain organs to which its nerves are distributed. These consequences do not depend so much upon the degree and extent of pressure upon the cord or its nerves, as upon the quick progress of the curvature. Thus a patient with a very small degree of curvature, and little or no vertebral pain, may be affected with paralysis of the lower limbs, with general weakness, and a torpor of the digestive and urinary organs, whilst another who has had several bodies of the vertebræ destroyed, and the spinal canal and cord considerably contracted, has continued for many years before death with little or no defalcation in the animal functions.

We observe in our daily practice that disordered secretions, neuralgic, spasmodic, paralytic and mental derangement occur, and for the most part without inflammatory action, and without organic disease of the nervous system, or, at any rate, in a palpable degree ; yet nearly all writers acknowledge that the whole class of hysterical affections, however much they change in their distinguishing characters, are essentially the same both in men and women, and have their seat in the nervous system, affecting men with indigestion, depressing morally and physically their energies, having a greater tendency in them than in women to fix upon some organ, according to their predisposition.

Hoffman, Boerhaave, and indeed others, before and after them, have pointed out that disorders of the digestive organs sometimes affect the different portions of the medulla spinalis, exciting diseases of the trunk and



extremities, without operating through the medium of the brain, but through the ganglionic system, being in fact the spinal pathology of hysterical, nervous, and other complaints. Reciprocal action of the spinal cord and nerves of the viscera, is but too partially acknowledged, consequently do not sufficiently influence us in our inquiries into the nature and treatment of diseases in general; for instance, irritation of the dental nerves in dentition is very generally, and properly, considered the cause of many nervous diseases of children; but how rarely is the mutual action of the cord and sentient nerves of the abdominal viscera thought of, although it is one great reason why the pathology and treatment of their diseases is so obscure and difficult. Another reason is, the brain is studied too generally independently of that of the ganglia and of the spinal cord.

The laws of sympathy, which have always been observed by practitioners, is in effect the theory arrived at and named by Dr. Hall excito-motory system, which he divided into two sets of nerves, the incident and reflex. We know that several definite vital movements take place without our consciousness, therefore they are conceived to be performed by a class of nerves forming the organs of physical sensation and involuntary motion, and nearly proved by Mr. Grainger to exist in the spinal cord, and satisfactorily proved by Dr. Carpenter to exist in the invertebrata.

Professor Müller observes, that “the whole system of respiratory nerves can be excited to action, by irritation of any part of the mucous membranes from the mouth to the anus, from the nostrils to the lungs;” and again, Dr.

Hall's theory is that the spinal nerves are distributed on the skin, to form the excito-motory nerves of respiration. Since no ostensible reason can be adduced against this theory, we must allow the statement of these gentlemen to be correct.

This will lead us to conclude that there must be a central tract of nervous matter, composed of those nervous fibrils, which connect the respiratory ganglia with the skin and alimentary canal, which has long since been pointed out by Sir Charles Bell, as the respiratory tract. These again, being in connection with the olivary bodies are no doubt the respiratory ganglia, and probably also of the nutritive organs, by the distribution of the various nerves with which they are connected.

If, to these facts, we associate the influence of the ovaries and testies upon the ganglia of these important organs, and again the influence of the dorso-lumbar portion of the cord, upon the generative and pelvic organs; and, indeed, directly or indirectly, upon the whole system, we cannot therefore hesitate to admit that the sources of nervous affections are as numerous as they are evanescent and variable in character, and connected principally with the spinal cord.

Hence the judiciousness of directing our remedial means to the external surface of the body, for instance, in the following cases :—spasms of the larynx, attended by spasmodic croup and aphonia, or of the œsophagus, giving rise to globus hystericus, in consequence of the interruption of the flatus, secreted by the stomach and intestines; or when the diaphragm and intercostal muscles are spasmodically affected, together with some

other respiratory muscles, causing very prolonged syncope. Also, when the liver or renal glands are functionally deranged, and indeed when the brain is affected, giving rise to impaired consciousness, spectral illusion, delirium, temporary insanity, and functional derangements, the brain is particularly affected, may occur without greatly impairing the general health for a given time.

These diseases are only varied evidences of the same state of the nervous system, developed according to the anatomical structure of the seat of disease. We must dismiss the idea of inflammation or vascular pathology, which explains everything on the principles of congestion and change of organic structure; views, however, of late fortunately, very much modified by new facts which physiology proves, that causes of nervous affections may produce all the characteristic symptoms of inflammation, without inducing the concomitant changes in the capillary system peculiar to inflammation; for instance, a case of nervous asthma will assume all the characteristic signs of acute bronchitis, and even the pathognomonic sputa. Should this circumstance mislead a practitioner to treat it as an inflammatory case, it would be inflicting the patient with very unnecessary severity, if not risking imminent danger; and as it would be in cases of coma dependent upon jaundice or the latter affection, with hypochondriasis, or, in cases of gout, rheumatism, or affection of the mucous membranes, arising from the same source.

The kidneys are continually functionally deranged, in consequence of spinal irritation, the urine is altered



from its normal character, giving rise to gout, disease of the brain, heart, or of the liver, possibly in consequence of urea not being secreted in sufficient quantity, for it has been proved by Rose and others not to be at all secreted in acute hepatitis; and all practitioners know how very like in character urine is in hysteria and gout, and how much the two diseases simulate in habits, and often occurring in the same patient of both sexes. Hysteria frequently terminates in gout, particularly when the patient is advanced in years, or affection of some of the thoracic viscera, as asthma, angina pectoris, or in some functional or neuralgic affection of some of the generative organs, or in a general cachectic state of the system. Gout, however, appears most generally in men, and hysteria in women: and in both, the affections appear with but few exceptions after puberty, in the spring and autumn.

Whytt, Ferrier, and various other writers, have noticed the great similarity in the mode of attack of gout, hysteria, catalepsy, and some other forms of nervous diseases. A glance at the anatomical arrangement of nerves from the dorso lumbar portion of the cord, and from the respiratory ganglions to the various organs, will readily enable us to conceive how the various organs are implicated by disease.

In a treatise on neuralgic, or painful affections of the nerves, by M. Valleix, of Paris,\* the attention of the profession is directed to the distribution of the spinal nerves, to explain the pain, generally in the side, which

\* I have made the following extracts from Dr. Forbes's very talented periodical Review.

young women are very subject to, called the *stitch*. M. Valleix says, that the intercostal nerves give off an anterior perforating branch near the sternum, and a middle perforating branch at the middle of the intercostal space; and also that the posterior branches for the spinal muscles send some filaments through them, which ramify in the skin; these may be called the posterior perforating branches. M. V. has pointed out three places in the course of the nerves which are painful on pressure. The first of these is situated a little to the outside of the spinous processes, nearly opposite the exit of the nerve from the intervertebral foramen. This is the posterior or vertebral point. The second is at the middle of the intercostal space, the lateral point, while the third will be found between the cartilages, a little to the outside of the sternum, or in the epigastric, a little to the outside of the median line. This is denominated the anterior sterna, or epigastric point, which is by far the most commonly affected. These points are only painful to pressure just around them. To detect the true nature of these cases, and to distinguish them from inflammatory diseases of the heart or lungs, must depend upon our judgment in auscultation and percussion, thus to detect them from angina pectoris by the absence of a sense of impending dissolution which attend that complaint, from rheumatism of the thoracic parietes by pain being more extensive in the latter than in nervous pains, and the muscles being painful when brought into action. To make our diagnosis in acute diseases of the spine, there can be no difficulty; but in chronic affections of it, there may be some; yet, in nervous affections, pressure

is more painful on the side of the spinous processes that immediately cover them, as in rheumatism.

M. Valleix also makes the following remark on the lumbar nerves, when treating upon Lumbo-abdominal neuralgia :—

“ In reference to the anatomy of the parts concerned, it is necessary that the reader should bear in mind—that the posterior branches of the lumbar nerves become subcutaneous filaments, which run downwards to the integuments of the hip, and intersect the crest of the ilium at right angles, in front of the common lumbar mass ; that the cutaneous filaments of the abdominal branches of the lumbar plexus terminate in the skin over the lower part of the rectus ; that the anterior cutaneous branch of the external inguinal nerve becomes superficial at its exit from the femoral arch ; and, that the scrotal nerve terminates in the skin of the scrotum of the male, and of the labia majora in the female.”

These nerves are subject to neuralgic affections, and, like the intercostal neuralgia, more so on the left than the right side, and the following points connected with the distribution of the lumbar nerves, which in neuralgic cases are the most sensitive or painful upon pressure, according to M. Valleix : First, a lumbar point, a little to the outside of the vertebræ. Secondly, an iliac point, a little above the middle of the crest of the ilium. Thirdly, a hypogastric point, above the inguinal ring, and to the outside of the linea alba. Fourthly, an inguinal point towards the middle of Poupart's ligament.



Fifthly, a scrotal point towards the lower part of the testis, and in the female in the labium.”

These facts not only lead us to make correct diagnosis of the various affections, such as organic, functional, inflammatory, rheumatism, &c., occurring in the pelvic regions, but at once show to us the reason of directing our attention to local means, which ample experience has confirmed to be most beneficial; for instance, I have in several instances applied as a liniment a drachm or two of tincture of aconite well rubbed upon painful parts, either the effect of neuralgia or rheumatism about the head, trunk, and limbs, in the absence of fever, with perfect success after one to four applications. Also in cases of cramp of the legs and stitch of the side in young women, as well as in cases of lumbago, or the result about the loins of painful menstruation. In some instances I have used the veratria in proportion of two scruples to a drachm, mixed up with an ounce of lard or spirit of rosemary. The latter application produces tingling heat for an hour or two afterwards, and the aconite tincture produces a sensation of numbness and cold. I have always found it more agreeably applied warmed in a cup placed in some hot water; also the veratria, when dissolved in spirits, and used as liniment. I generally direct these applications to be rubbed in small quantity at a time, until the requisite quantity is well absorbed; and instead of using the hand or fingers in rubbing them in, I have recommended a piece of sponge tied to a bone, sold by stationers for schoolboys to clean their slates; it saves the unnecessary

tingling or numb sensation in the fingers of the patient or the attendant. The practice has been found equally efficacious by other practitioners. I have this winter tried with satisfactory result the cyanide of potassium solution, as recommended by M. Malherbe in cases of acute articular rheumatism.

The first case was a gentleman about forty years old, subject to rheumatic gout. I am not positive whether it was a pure case of rheumatism or mixed with gout. The pain was most severe, of a dull, heavy character, as he describes it in the knee joint, and much worse towards the evening, and continuing so until three or four o'clock in the morning, keeping the patient awake in great agony, notwithstanding morphine had been taken at night, and externally applied, as well as leeches, hot fomentations, and croton oil, both as a purge, and a counter irritant, as a liniment, without, however, deriving any permanent relief.

He was, however, relieved in twenty-four hours, without using any other remedy than a lotion, in proportion of ten grains of cyanide of potassium to an ounce of distilled water, applied continually upon lint to the knee, and in three days he was quite cured.

The other case was undoubtedly a pure case of rheumatism in the hip and thigh of a person, who by the same means was entirely relieved, after but slight trial of other means. It is a valuable medicine in severe cases of nervous head-aches and other neuralgic affections, such as spasmodic asthma and ordinary cases of dyspnœa, spasmodic strictures of the urethra, applied either to the sacrum or over the urethra, or both, and in

dysmenorrhœa to the sacrum. However, I have found already most satisfactory results in all these cases from the use of veratria in proportion of two scruples to an ounce of lard applied as above proposed, for the cyanide of potassium. Dr. S. Bushnan was the first who proposed the use of veratria in cases of dysmenorrhœa. I have in some cases found it extraordinarily and quickly successful, whilst in other cases it appeared to have no appreciable effect.

I have also found veratria a valuable remedy in whooping-cough, when well rubbed on each side of the spinous processes of the cervical vertebræ, and to the thyroid cartilages, and in some cases wherein the larynx and its appendages were implicated. In all cases wherein veratria may be useful, I occasionally have found two to three grains dissolved in one or two drachms of the tincture of aconite for each application—a more efficient combination than either, singly applied,

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## CHAPTER IX.

HAVING taken a general view of man and of his habits, we cannot but conclude that he is influenced by favourable or unfavourable physical causes for his full development in size, vigour, and health of frame, to abundance of food and warm clothing, with a temperate climate. Thus placed, he transmits to his progeny these desirable qualities, though ever failing him in either extremes of climates ; whether he lives in the extreme cold of the north, upon animal food, or in the extreme heat of the south or east, upon vegetable food, he becomes comparatively stunted in body and mind. In short, man is governed, and susceptible of being influenced favourably or on the contrary, as all other animals are, by physical laws, since all are formed by the same general principles. Each species is capable of being improved by uniting their several dispositions, and by attention to appropriate nourishment, and comfortable warmth, with abundance of fresh air, just upon the same principles as the successful culture of the productions of the earth are effected.

The intellect of man is improved, and rendered in a greater degree susceptible of moral culture, by the same means as favour his full physical development. Superior moral culture of one generation favours a greater tone of mind, and facility of acquiring knowledge, in the next, if not too near a relationship exists ; a fact, uni-

versally acknowledged from ample observations, sadly to interfere with the intellectual development of the progeny. Such alliances were mercifully forbidden in the Mosaical laws.

Since strength of body depends upon due observance of physical laws, apt susceptibility for superior mental acquirements, and power to judge correctly, is capable of being improved in every generation, by duly regarding simple rules, that are equally available to all.

It is the business of the physician, not only to study the best means to relieve his fellow creature, suffering the result of the ignorance and neglect of his forefathers, but to point out, in his daily professional avocation, the rules by which they may be avoided. Fortunately, of late years, this important subject has commanded a more general attention than formerly, and the result is unquestionably in the aggregate a greater span of human life.

It is, however, doubtful if the pleasurable sensations of vigorous health has increased, in general, upon the people, for although fatal complaints have been warded off, for an increase of time, their shadows appear to be proportionably less obscurely developed, in the form of various nervous complaints and indigestion, supposed by many to depend upon an increased call upon the mental functions of the brain, to supply the additional wants of superior civilization; or precisely according to the degree the assimilating organs are deprived of nervous energy, supplied them by the brain and spinal marrow, through the very important and well-secured ganglionic system of nerves, in which all are combined,

and altered in power, and issued forth by nerves to the various digestive organs, according to their functional duties to form blood, repair and continue the life of the whole fabric. According to Dr. Faraday's established doctrine of electro-chemical equivalents, all chemical changes are the effects of electric action; therefore it is most probable, nay a fact, that the brain and spinal marrow include organs capable of collecting, and, through the nerves, applying voltaic electricity, which, modified in its effects by the properties of life, is the immediate agent of the assimilating functions, and so is the nervous systems of animals, capable of collecting and applying, even, according to the dictates of the will; the electric power is evident from the phenomena of electric animals.

When an organ is deprived of any considerable portion either of its blood, or of the influence conveyed by the ganglionic nerves or others, its function immediately ceases, and sooner or later its structure is deranged; and when the blood alone is wholly withdrawn, the vessels are no longer excited, and the nerves have no longer the material on which they can operate; the action of both, therefore, necessarily ceases. When the nervous influence alone is withdrawn, the power of the vessels, being independent of this influence, and still supplied with their usual stimulant, continue to convey their fluids as usual: but these fluids no longer undergo apparently the usual changes that attend normal assimilating functions.

Whatever influences the vital of the brain or spinal marrow, may influence not only the circulation in every part, but all the other functions of life; for instance, if



the voltaic electricity, *i. e.* the nervous energy be in small portion withdrawn, it causes the functional duties of an organ to change the character of fluid, which become proportionally deranged ; thus when any portion of the spinal marrow or brain is morbidly affected, the assimilating functions of the digestive organs become more or less deranged, and because the effect is in the greatest degree perceived, the whole is attributed to the stomach, by both the patient and the medical attendant, and necessarily combated with little or no cause for rejoicing, thereby losing valuable time in allowing the enemy to habituate the parts to morbid action, which often continue long after the cause is removed, and occasionally instituting by sympathy, disease in a remote organ.

It appears astonishing that, notwithstanding all that has been written of experimental research, it seldom occurs to physicians that both acute and chronic derangement of the assimilating functions, or digestion, may be sometimes, at least, in the spinal marrow, instituting disease in various organs, merely for want of due supply of nervous energy, supplied by the brain and spinal marrow, arising from disease in some portion of either, and thereby interrupting the nervous current ; hence inanition of the body, for want of power in the stomach to make chyle, diseased lungs, heart, or bronchial tubes, gall stones, renal and urinary calculi, gastric intestinal uterine and prostratic irritation and spasmodic affections.

In further support of these facts, Dr. Hall has also made the following observations, in his work, that the ganglionic system is the system of secretion and nutri-

tion, producing the chemical changes, &c., and that the cerebral system is psychical, is the mental seat and the true spinal, is the seat of physical acts, consequently exciting convulsions. The cerebral diseases affect, first, the cerebral function, and the true spinal functions consecutively.

Inflammation of the membranes (meningitis) of the spinal marrow produces irritation, spasm and inflammation of the marrow or myelitis, and destruction of the organ, paralysis, &c. Symptoms common to both may come on from either, consecutively, and they are confessedly difficult, if possible, occasionally to distinguish. Notwithstanding the diversification of symptoms of nervous cases, they are essentially the same, and may be cured by directing our remedial agents over their source in the nervous centre, particularly to the spine, thorax, and abdomen, selected, however, according to the temperament of the patient, as the following cases will, I trust, convince the reader.

#### CASE.

Miss —, age 22, consulted me in August 1834, in consequence of neuralgia of the left mamma. The part affected was exceedingly tender, slightly swollen, and hard. The areola was very dark; but the skin and cellular substance over the part affected were not inflamed. The pain was always greatly aggravated at each menstrual period, extending occasionally down the arm. The situation of the pain was in the upper and axillary side. The patient looked healthy and *en bon point*, light complexion, brilliant skin, and delicately finished-

built woman, of a nervous sanguineous temperament. I was informed by her mother that she had enjoyed good health until she was seventeen years old, when the usual constitutional change occurred.

About a year afterwards she became subject to renal ischuria, during which attacks profuse perspirations with alternate cold chills and heats came on, apparently to relieve the system, in part, of the consequence of the kidneys not performing their normal functions; but dyspnæa and palpitation of the heart, with head-ache, soon came on, when the renal functions ceased, and the consequent perspirations rendered the skin irritable, and miliary eruption followed, attended by fever and quick small pulse.

The medical gentleman who attended the patient informed me that the perspiration was very offensive, and that the catamenial flow was scanty, pale, and appearing at shorter intervals than natural, at no regulated periods, always with much lumbar and coxarial pains, mental excitement, and capriciousness.

After these dysmerorrhæal symptoms ceased, leucorrhœa followed; the bowels were generally constipated during these attacks, subject, however, to occasional violent fits of diarrhœa, that now and then relieved her temporarily of all her distressing symptoms. Notwithstanding drastic purgatives, that her medical attendant had continually administered to her, they as continually failed to mitigate her sufferings. He also, at intervals, applied a great many leeches to the mamma, and hot fomentations, cupped and blistered around the affected part, and used anodyne liniments with but very evan-



escent advantage, together with sulphate of zinc, lead, and nitrate of silver solutions as injections, with a view to overcome the leucorrhœa.

On examining the spine I found the lower dorsal and two of the lumbar spinous processes very tender, together with the lower part of the sacrum, her nose pinched, blue and cold, her fingers' ends cold and clammy, as well as the feet. These circumstances, together with her variable symptoms and temper, well assured me that the case was hysteria.

At this time her spirits were very low, despairing of ever being cured without an operation to remove the mamma; in consequence of her grandmother having, a few days before, undergone that operation, by a gentleman whom she also had consulted the day before I saw her.

He regarded the pain as something more serious than neuralgic pain, which her medical attendant had given as his opinion that it was. I fully concurred in the opinion of the latter, but totally differed in his views of treating the case. It is true that hysterical pain is oftener under the left mamma than in its substance; and, indeed, it is so from inflammation; but here it is preceded by rigors, and of a stabbing character, with difficulty of breathing and anxious countenance,—all very different from what accompanies hysteria.

I suggested to him that all local remedial means to the painful gland should be left off, because in these nervous subjects, painful nervous diseases are not only continued, but formed by the patients having their minds continually directed and fixed to any part already

diseased or not. When the mammæ are affected, the patient invariably regards it with much more anxiety than disease in any other part, and associates it in her mind with serious consequences, either from personal knowledge of a dire case, or unguarded observations of her attendants; hence she continually feels and presses the gland, to ascertain if the tenderness or swelling is decreased. Thus it is irritated in addition to mental influence over nervous pains. I, therefore, directed in this case a large adhesive plaster spread upon very thick soft leather, so as effectually to prevent the patient from touching the gland, and directed it should on no account be removed or renewed until it lost its adhesive qualities. Having ascertained that the bladder was empty, and that not more than three or four ounces of urine had been discharged for the last three days, it was reasonable to attribute it to renal ischuria and the excessive perspiration as a consequence. We know that in hysterical patients, secreting organs are frequently temporarily retarded in their functions or unduly excited, in consequence of the ganglionic system being peculiarly influenced, we conceive, by some cause of irritation going on in the spinal marrow, or in its membranes, which also cause the palpitation and dyspnæa, the occasional diarrhœa, and the general constipated state of the bowels. Instead of continual administration of drastic purgatives, the intestines were left to take care of themselves with the exception of a glyster of very warm water every night and morning. The patient was directed to live upon dry food as much as possible, to avoid all kind of slops, and to take daily as much walking

exercise as possible and a warm bath at a hundred degrees, two hours before dinner, or three hours after, and to remain in the bath as long as she felt comfortable, from ten minutes to an hour, and to have the bowels well kneaded, if I may use the expression for the operation, for at least five minutes, and to have the spine well rubbed ; also last thing every night, for ten minutes, with a morphine liniment. I recommended the parents to allow their medical friend to make a charge for his daily attendance of a sum satisfactory to both parties, rather than to send medicine to do so.

To this simple plan I found much difficulty to induce the patient to conform, having been for so long a time accustomed to depend upon swallowing medicines as means of cure, and continual indulgence from most affectionate parents, whose anxious expression and pity for her sufferings tended much to keep up her morbid condition, both in a moral and physical sense. However, after explaining to them my reason in adopting the plan of treatment, I received from them their aid to induce my patient into compliance, to observe all my injunctions, and gradually she lost her apathy to walk, and in three months, without any material change in the plan, she was pronounced well, and has continued free from those severe attacks and indisposition.

In cases where the spine is but slightly irritated, undeviated horizontal position is not necessary, yet it is of great importance that the patient should be directed to lie down after walking in the open air. Walking and occupation of the mind are essential remedies in hysteria, in indigestion, &c. Sydenham laid great stress



upon muscular exercise, to exhaust the irritability of the sensitive system ; it also strengthens the respiratory and alimentary organs, prevents or destroys undue secretion of acidity in the stomach, if carried on to cause free perspiration ; thus removing a source of great misery to the delicate in health, and to the free liver, as well as hosts of complaints which acid or cause of its undue presence is capable of producing or does produce.

I conceive that every thing should be made subservient to exercise in the open air, with occupation of the mind, as by gardening, &c. Medicines should be regarded as palliatives rather than restoratives ; change of scene by travelling is only within the means of comparatively very few patients, and, indeed, it may be rendered unnecessary by merely occupying the mind and body, and that in the most agreeable manner possible. My patients soon recovered the regular action of the bowels by warm baths, injections, and walking, and, above all, by being left unirritated by frequent doses of purgatives, a most frequent cause of irregular action of the bowels, more particularly so in some temperaments. The kidneys recovered their normal functions, and the perspirations ceased, together with the *formica miliaris*.

In hysterical females, when the catamenial flow is retarded, irregular, slight, or profuse, a sense of alternate heats, chills, titillation, or formication, and analogous sensations, are frequently experienced, and even herpetic and other eruptions, which, however, readily give way by those means that restore the constitutional tone. The uterine irritability, *dysmenorrhœa*, and *leucorrhœa*, are frequently considered as the cause of the

usual accompanying symptoms ; but I think it is more reasonable to regard the supposed causes and effects as consequences of some derangement in the nervous centres. The circumstance of a woman after having her menses suppressed or deranged, losing her ailing symptoms, and recovering her wonted energy and health on the menses reappearing, no doubt lead to the popular impression that all depended upon a faulty state of uterus. This theory, to say the least of it, has often led a medical practitioner to afflict his patient most unnecessarily, if not dangerously, by a severe course of treatment, as by bleeding, drastic purgatives, blisters, salivation, and starvation, or by clogging the stomach with some preparation of iron.

Miss ——— recovered the normal condition of the uterine function by the soothing plan, a mode of practice I can most confidently recommend, after more than twenty years experience, as by far the most safe and successful, which the following cases will probably prove :—

#### CASE.

Miss M. A. M'Donnell, of the serous temperament, aged 14, consulted me on the 16th of October, 1840. She had been an invalid for about a year and a half, during which time she had been attended by a medical gentleman ; and now and then a physician was called in to meet him in consultation. They agreed that the following symptoms were dependent upon retarded change of life, for which end her grandmother said she swallowed

much *forcing medicines*, and had leeches and blisters often applied to the loins and side, to relieve the severe pains she experienced in those parts, and for the cough, which greatly distressed her.

On finding that her general indisposition—debility, cough, wheezing, and oppressed breathing, were increasing upon her, and that her life was despaired of, I was requested by the grandmother to take the sole charge of the patient. I found her exceedingly weak, having a severe cough, with muco-purulent sputa, and oppressed quick sonorous breathing, tongue covered with a moist, dirty white film, her pulse small and quick, her bowels confined, with a total loss of appetite, her urine small in quantity, and passed with severe cutting pain and difficulty, always containing large quantity of mucus, and very offensive, and so was the axillary perspiration, ammoniacally musky; her complexion was palid, inelastically doughy and greasy, of an unwholesome hue; in short, the usual but aggravated characteristic of morbid signs of the asthenic division of the phlegmatic or serous temperament, relaxed, feeble, and sluggish. A state of the system which is ever so productive of the long and melancholy class of scrofulous affections.

These circumstances induced me to examine the spine, which had not been done before. I found the two last dorsal, and the first lumbar vertebræ protruding outwardly, and very painful to pressure; and when I placed my finger on either, and rapped it with the other hand, her whole frame, she said, seemed to be electrified, exciting nausea; cough followed in a much greater degree than before the spine was touched, and a desire to



urinate also came on. I felt assured that the cause of dysuria, torpid bowels, and the bronchial affection, together with her dyspeptic and nervous condition, could only be cured by keeping her undeviatingly in the horizontal position. Suffice to say, that, after being confined eight months, she is quite recovered, and has gained much flesh.

#### TREATMENT.

I ordered glysters to be administered, containing muriate of soda, dissolved in warm water, every day, hydriodate of potass and a liniment of morphia, when she could bear it to be rubbed on the back. This operation was obliged to be deferred for some weeks, in consequence of the back being so tender. To the protruded spinous processes nothing was done but applying pressure to them by the hand and by a pad attached to a strap secured above her crib to a fixed point. Thus when she rested on her back in bed, a considerable portion of her weight tended to press the vertebræ into their proper position; and when she rested on the stomach, the pad was removed, because the abdominal viscera tended necessarily to produce the same effect of bringing them down towards their normal line. Thus the proper line of the spine was recovered, and her appetite in about four months, when the cough, palpitation, dysuria, &c. ceased to trouble her, and at eight months her menses commenced, and have continued regular, and she now enjoys good health. Her breathing has become as perfect as possible, and particularly since

the menstrual flow commenced, there can be no doubt that the sexual organs act specially upon the organs in general connexion with the respiratory ganglia, and that this system is in very close connexion with the whole external periphery; indeed, Dr. Hall satisfactorily proves the spinal nerves distributed on the skin, to be the excito-motory nerves of respiration. Hence we frequently observe that patients with bronchial affections are much worse when the alimentary canal is in an irritable condition, and their great susceptibility to be influenced by a change of weather, and their usual correct cognizance of change of wind and temperature.

It is generally supposed that the patient's health is injured by undeviating confinement to the horzional position, whilst the fact is that they never get well without doing so, and invariably get lusty and healthy by it.

#### CASE.

Hon. Miss —, aged 24, her father and his family have suffered much from gout. She is of the sanguineous temperament; although now much reduced in strength, and very thin, she was before her illness commenced, seven years ago, quite *en bon point* and ruddy, with a most devouring appetite, and indefatigable vivacity and energy. On inquiring into the pathological biography of my patient's family, and of herself, abundant facts were accumulated readily to assure me that she was not only hysterical, but of an arthritic diathesis, influ-

encing much her morbid and over-susceptible system to nervous irritation, giving rise to various symptoms of particular diseases. Thus, from the commencement of her illness, she has been treated, at various times, for inflammation of the brain, heart, lungs, stomach, kidneys, bladder and uterus. The reader may be astonished, and doubt if such variety of simulating symptoms of active or chronic complaints could occur in one individual. It is nevertheless a fact that I, and other practitioners necessarily, have witnessed it in complicated cases of metastatic hysteria.

The first signs of indisposition were attributed to paucity and painful catamenial secretions, and chlorosis followed, accompanied by head-ache, constipated bowels, pain in the loins, and left side below the mamma, the usual seat of hysterical stitch; these symptoms led to the practice of general and local bleedings, purging, &c. Thus the irritability of the system was increased in proportion as it was debilitated, and dysmenorrhœa terminated in menorrhagia from excessive weakness, and, finally complete amenorrhœa, which probably tended to secure her little remaining strength; only, however, to fan life to continued sufferings, mentally and corporally, for a long time after.

September 12th I was consulted, and found her sitting in her easy chair, near a good fire, well wrapt up in a shawl, and mentally sullen within herself, taking as little notice of her nurse announcing me, as she did when I addressed her. When at last she was roused by her mother to raise her head, to look and speak to me, I readily perceived she had the peculiar hysterical counte-



nance and manner; cold blue pinched nose, with the tips of her fingers and nails in the same condition, impatience of manners, restlessness, hurried, fidgetty, and timid.

I was given to understand that her temper was exceedingly irritable, and that occasionally she was capricious in her dislike and preference of her family and things. The slightest noise, or any fancied appearance of danger, caused her to feel more acutely her usual symptoms. Sometimes she was joyous and pleasant, afterwards dull and melancholy. She slept but little at night, and when she did, it was accompanied by horrible dreams that awoke her to feel most acutely her headache, and undue sensibility to sound, light and touch. Her pains were always described to be more acute, constant, and greater than was evidently warranted. This habit of over-describing symptoms is common to nervous persons: a slight touch of the affected part, or even the attempt, will cause the patient to shrink, and sometimes to scream. Their skin, like an inflamed gouty toe, is pained by wafting the air, by walking, or speaking loud in their room. It seems to depend upon excitement of the motor system, and the latter may account for the analogy that exists between gout and hysteria, long since noticed by authors, and we may add their frequent dependence upon the dorso lumbar nerves, and the influence of the sexual organs, in exciting or continuing either or both.

The point of resemblance between the two diseases is most interestingly developed in the occasional occurrence in both of an erratic secretion of urine. We know that

an intimate relation exists between the renal diseases and those of the cardiac affections, liver and cerebral diseases. The latter affections, Dr. Bright has proved, to be the connexion with the presence of urea in the blood. Renal disturbance produces in men the different forms of erratic gout, and in women of anomalous hysterical diseases, travelling from one organ to another, as it happened in this case.

The influence of the spinal nerves over the kidneys in enabling them to purify the blood, or secrete the *materies morbi*, is undoubtedly a fact. We can have no difficulty in fancying how the kidneys may, in many instances, have distinct sympathies, similar to those of the ovaria and testes; or in comprehending how the latter may modify the functions of the former, and so contribute to the establishment of diseases, which originate in a defective elimination of the urinary constituents.

Gout and hysteria very seldom attack boys and girls, adults continually. In men, many disorders of the respiratory organs, which simulate asthma, bronchitis, angina pectoris, and other serious diseases, are connected with that state of the system in which regular gout is developed, and follow all its general laws. Instances are numerous pointed out, by various authors, not only of these diseases, but paroxysm of hypochondriasis, mania, epilepsy, spasms, paralysis, vomiting, fainting, vertigo, cardiac palpitation, rheumatic and various neuralgic pains, alternating with regular fits of gout, so as to leave no doubt of their real nature.

The function of my patient's kidneys varied greatly in quantity and quality; during a nervous paroxysm it

was aqueous, with little urea, but in a chronic and aggravated case of hysteria, it is alkaline, depositing the triple phosphate in abundance, as it was in this case. It also occurs in paralytic and other nervous affections, accompanied by debility, arising from either disease or means of a depleting character to subdue it. This alkaline condition of the urine, excites the bladder to secrete much mucus and alkaline. Dr. Prout says, that the bladder secretes phosphate of lime and carbonate of soda; it is, therefore, difficult to say, in some cases, whether the alkaline is secreted by the kidneys or bladder; it may be in both.

In this case there were sufficient evidence of disordered functions of the dorso-lumbar portion of the spinal cord by the altered functions of all the viscera connected with it, but more particularly in the vesical paralysis, which, indeed, attends upon most cases of aggravated hysteria. When there was incontinence of urine, I invariably satisfied myself that it did not depend upon *over-distension*, and never interfered when little or no urine was passed for twenty-four hours, or two, or even three days. The varied condition of the bowels being either violently relaxed or obstinately confined and tympanitic, I attributed to the same cause, together with the functional derangements of the thoracic organs, and treated them successfully upon general principles.

It is important to observe that, although my patient was occasionally distressed by cold chills, she was more commonly afflicted with pricking and burning sensations of the skin all over the trunk, with great tenderness of the cellular substance. She frequently com-



plained of a cord-like tightness over the pit of the stomach, with a great tendency to faint, and twitchings of the muscles of the face, and cramp of the legs, which were generally very cold up to the thighs ; the soles of the feet were particularly tender to the touch. The spine had not been examined by any of the twenty-six medical gentlemen she had consulted. I mention this fact to show how rarely the spinal column, or its cord, is associated with the cause of severe or serious symptoms of disease.

On examining the spine I found the dorsal vertebra too prominent, and without any lateral curvature, but forming too great a bow, whilst the first lumbar was sunk below the last dorsal vertebræ, the second too low, and the third unnaturally elevated. I considered that the varied and continued severe suffering of my patient was owing to the displaced dorsal and lumbar vertebræ pressing and irritating their respective nerves, in their passage through their notches in the displaced vertebræ, causing functional derangement in the organs to which they terminated. Ample experience has proved that irritation at the origin of nerves is not the seat of the principal inconvenience experienced by the patient, and that it is in the periphery of those respective nerves so irritated, hence the remoteness of the effect from the cause.

I stretched the spine every other day, with the aid of an assistant, for a few minutes, after it was well rubbed with oil for about a quarter of an hour, and then applied a wooden shield, properly constructed to fit the back, and well stuffed, with an extra linen pad over the protruding lumbar vertebræ. These were removed daily,

and the back was well rubbed, and the patient was undeviatingly kept lying on the back.

By this simple plan two depressed lumbar bones were raised, and the third and fourth depressed, so that the natural hollowness of the loins was restored, and the dorsal bow lessened. Whilst these favourable changes were going on in the spine, the various distressing symptoms my patient experienced for so long a period, gradually subsided; she became cheerful, her sleep refreshing and free from dreams. Her appetite and digestion became natural; her cough, palpitation of the heart, and head-ache ceased, together with the undue tenderness of the soles of the feet, and over the spine, and the cord-like tightness over the stomach. Also the pricking heat over the trunk; the hands, legs and feet became warm and strong; the action of the kidneys, bowels, and the uterine function became regular, with but one daily dose of carbonate of ammonia and hyos cyamus, mixed in rhubarb infusion, or occasionally in some bitter infusion.

After lying down four months she was allowed to walk between two persons for a few minutes daily, gradually increasing the period; in six months she was taken below stairs, and in eight months she was cured.

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## CHAPTER X.

It is generally admitted that nervous affections, usually denominated hysteria, simulate most diseases; yet when a patient has symptoms of inflammation of the brain or eyes, ears, bronchial tubes, lungs, heart, stomach, bowels, kidneys, cramps, or paralysis of a limb, how rarely the medical attendant pauses to balance the features of the case, or suspects it to depend upon temporary nervous derangement, originating remotely from the affected part in the nervous centres, ere he rushes into the conclusion that the cause and effect is local inflammation, and treats the case by depletion, in severe and dangerous degree of activity, according to the apparent urgency of the inflammatory symptoms, thus subjecting the patient to a prolonged painful treatment, and very possibly an irreparable constitutional injury. To prevent such disastrous consequences, it is essential to observe well the temperament, age, countenance, moral and physical condition, and habits of the patient, season of the attack, and every symptom and circumstance connected with hereditary biography, before a definite plan of treatment is determined upon.

This deliberation is also required, because we cannot know the exact condition of the nervous system when producing such affection, whether it be local or symptomatic of the general condition of the nervous system, or a reflected cerebral or spinal action. Yet cramps, evan-



escent pains, and paroxysmal affections, may be regarded as different phases of one pathological state of the nervous system, and may be traced to the nervous centres. Thus remedial means of a soothing character may be externally used, as well as administered internally, to assuage the great irritability of the nervous system. Under such circumstances slight exciting causes produce exaggerated effects ; slight impressions hurry the heart and circulation, irritate the nervous system, disturb the passions and affections, derange the respiration, and may terminate in a complete attack of hysterical convulsions, coma, catalapsy, or epilepsy.

In the last edition of Dr. Billing's work, page 203, he says, " Most or all of these forms of neuroses, variously modified, are indications of the state which in opposition to fever I call morbid sensibility (irritation), and appear to depend more particularly upon diseased action of the medullary parts of the central organs, however produced, whether arising there primarily, or induced there by disturbance in the periphery of the organs." Again, he says, " The delirium or coma of inanition-delirium-tremens, delirium from loss of blood, depends upon a state of the cineritious tissue, the reverse of fever, anæmia rather than plethora. But although, upon a careful analysis of the symptoms, and the different forms of the neurosis, we may, with attention to physiology, refer some to an affection of the cineritious (in which I include the cineritious parts of the cerebrum and cerebellum, the grey matter of the spinal cord, and of the sympathetic system), and others of the medullary parts of the nervous system, we should, *à priori*, from our know-

ledge of the connexion and mutual co-operation of these two divisions of the nervous system, expect to meet with disease depending upon simultaneous disturbance in both."

It has been suggested of late that hypochondriasis may depend upon exhaustion of the nervous centres. If so, we may attribute the usual accompaniment of indigestion, constipated or tympanitic condition of the bowels, to that cause, and explain why purgatives prove often so very injurious, as the following will illustrate :

#### CASE.

Mrs. A., a widow lady, 25 years old, a mother of one child, four years old, consulted me on the 28th of May, 1838. Six weeks before she suddenly lost the use of her left hand, after being indisposed for three months, during which period no catamenial flow had occurred, and she was often troubled with giddiness, head-ache, acid eructations, sickness, and a feeling of tension about the throat, having the abdomen gradually enlarging, and particularly so below the umbilicus, and somewhat defined, and resisting pressure, accompanied by severe pain under the left nipple, extending to the kidneys on the same side ; bowels confined.

#### TREATMENT.

With a view to restore the menses, and the use of the hand, to alleviate the pain in the head and side, and to lessen the abdominal enlargement, the patient had been

bled, leeches, cupped, blistered and purged, without benefit; consequently, her medical adviser informed her that she was either pregnant, or had a tumour growing in some part of the abdomen, amongst the intestines. As she was certain the former case could not be, although the latter might be, she was greatly alarmed, and induced to request my attendance. She informed me that her hand was somewhat better, but in every other respect she was much worse than before she began medical treatment. Certainly many of the symptoms apparently justified the suspicion of her pregnancy; nevertheless I considered that the abdomen was too large for a five months' pregnancy, and the areola round the nipple not sufficiently defined, although more than usually so, as well as the size of the mammæ; but when I applied the stethoscope I could not detect foetal circulation, but ample reason to be well assured that the abdomen was tympanitic. This circumstance, together with her general hysterical aspect, being pale, with cold hands, feet, and nose, puffiness, and haggardness about the eyes, and an expression of dulness and suffering; the pain in the head being of a throbbing character, and increasing intolerably on the slightest excitement; temper being irritable, and the mind despondent; tongue white, but moist; pulse quick, small and irritable; urine very turbid, containing much lithic acid, and passed, with sharp cutting pain, in small quantity; an indifferent appetite, with a tendency to faint; bowels exceedingly constipated; hardened fecal matter, like marbles, relieved once only in three or four days: these circumstances well assured me that the symptoms were hysterical.



I directed the patient to use a warm bath daily, at a hundred degrees, and to be well rubbed over the spine and abdomen, during the whole time she remained in the bath, and afterwards with a stimulating liniment; and, in about an hour subsequently, to have a pint of cold water with confection of rue injected.

On the third day an immense mottled hard mass of fœces passed; some portion was particularly indurated. After this relief she fainted, either from sudden removal of pressure or pain arising from its passage, and subsequently slept soundly, until the bowels were again relieved of the same quality of fœces, but somewhat less in quantity, and again fainted.

After being in the bath on the following day, the bowels were relieved twice, and daily continued to be so once or twice; thus the abdomen became less tense and tender.

After this simple plan of treatment had been pursued for less than a month, the catamenial flow returned, and the hand became obedient to the will; the pain in the head, side, and about the kidneys, although mitigated before, ceased altogether, in about six weeks from the commencement of my attendance, and the abdomen recovered its normal size and softness, and the uterus, kidneys and bladder their healthy functions.

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The following case of chorea, or St. Vitus's dance, will show the extraordinary advantage of administering the carbonate of iron, to eradicate the complaint.

## CASE.

Miss C——, aged 8 years, was brought to me by her parents, residing in Middle-row, Holborn, November 27th, 1833; they informed me that, a few months before, she had the scarlet fever, and that she was up to that time, enjoying a very good state of health. After she recovered of the fever, they observed, that her speech became tremulous, and gradually difficult, with a convulsive action of the head, trunk and limbs, which kept her incessantly in action ; her right arm was occasionally swollen, and weaker than the left. In attempting to raise a book off the floor, at my request, she fell on her hands, and failed to do so, after a hard struggle ; and, indeed, to raise herself safely she required assistance, and to walk, her parents on each side took firm hold of her arm. Her appetite was good, and her bowels regular ; slept soundly, without muscular twitchings, convulsive action of the muscles, returning only with consciousness, as is common in nervous cases.

## TREATMENT.

I ordered three aperient powders of calomel and compound powdered jalap, to be taken every other morning, which operated each time satisfactorily.

December 3rd, I ordered two scruples of carbonate of iron to be taken three times a day in treacle.

December 9th, she looked better, and more lively ; the bowels were confined by the iron for the first three days, but then recovered their natural habits.

December 16th, she could quietly hold her arm, and direct it to me, to feel her pulse ; her speech much better, together with the convulsive action of the trunk and limbs ; can take up a book or a pin off the floor, with certainty and facility. To continue the iron in drachm doses three times a day.

December 24th, going on well ; her right arm is still weak, but stronger than it was. Her speech is natural ; but her tongue is foul ; bowels regular : all the muscles quiet, and perfectly under the controul of the will. To take three grains of chalk with mercury, and six grains of calcined magnesia every night, and continue the iron.

December 31st, tongue clean, and in every respect apparently quite well ; having, however, slight twitchings of the fingers on holding the right arm out from the body : continue the remedies.

January 11th, 1834, with the exception of slight twitching of the little finger of the right hand, when the arm is held out from the body ; has resumed her needle-work, &c. &c. Continue the iron alone.

February 8th, quite well : ordered to take one dose of iron every night, for a few days, and afterwards every other night for a week. This patient has continued well, and is now a fine young woman.

#### CASE.

Miss M'D——, aged about 34, consulted me in February, 1841. For the last ten years she has been subject to dysmenorrhœa periodically, varying from three to five



weeks, and, during the interval, leucorrhœa. The pains are very severe in the loins ; the lower part of the sacrum, abdomen, and down the front of the thighs, the feet, ancles, and legs are exceedingly swollen, particularly the left leg, and very hard, red, and tender. At each menstrual period she had several most severe hysterical fits, screaming very loud, and having her limbs and trunk violently convulsed, striking the floor with her feet, even to shake the room to an extraordinary degree, crying and laughing alternately for a considerable time. She occasionally complains of bursting pains in the head, or a stitch in the left side. The bowels are very constipated, appetite indifferent, breathing oppressed, and her heart palpitated often violently ; her breath and the axillary perspiration were very offensive, temper irritable, timid, and anxious.

Having consulted various practitioners at different times without deriving any benefit, she considered herself incurable, and determined to spend no more money for medical advice, and to trust to nature, with the aid of an occasional dose of aperient medicine. However, in consequence of my having effectually restored the health of her niece, she was induced to consult me.

Whilst I was examining the action of the heart and lungs, she was attacked by a violent hysterical fit of the character already described. It was the first paroxysm I had seen her in, and, singular to affirm, the last she has had up to this time, and she said it was brought on from her excessive fear that I should confirm the opinion of her former medical attendant that she had a diseased heart.

Miss M'D. is of the nervous and bilious temperament, having the characteristic signs strongly marked. The heart was only irritable, and the lungs were apparently healthy; but the bronchial tubes were unduly charged with mucus, that excited a troublesome cough; the bowels were turbulently noisy. I felt assured, from ample experience, that the swollen condition of her legs arose from impaction of the cells of the colon by scybalæ.

#### TREATMENT.

I ordered an ounce draught, containing an equal quantity of castor oil and spirits of turpentine, to be taken twice a week, being a certain, and, I believe, the only known combination of drugs that will cause the colon to expel its contents. After several doses, indurated and mottled scyblæ, of the size of large marbles, continued to be discharged; after which I ordered half an ounce of carbonate of iron, mixed in treacle, to be divided in two doses, to be taken daily, night and morning. She continued to take it and a turpentine draught weekly for three or four months.

Thus she at once lost the fits and recovered her health, which she perfectly continues to enjoy. Her legs, which before were not only painful, and swollen as large about the ancles as her thighs, were reduced to a healthy size, with the exception of a slight deposition of organized lymph, the natural result of long-continued venous congestion and chronic inflammation in the cellular sub-

stance ; but as the cause is now removed, the thickening is continually lessening by the action of the absorbents, and doubtless will shortly be entirely removed.

#### CASE.

Miss C—, near Ewell, was induced, by the recommendation of a patient, to come to town, and place herself under my care. I saw her on the 6th of April, 1841. She was 25 years of age ; of a bilious serous temperament, with little energy, or excitability of mind or body ; a general morbid apathy, indifference, and sluggish indolence seemed to envelope her ; her skin was dingy, and particularly dark under and round the eyes ; tongue of a dirty white colour, on the left side, having a continual foul taste in the mouth ; the bowels were exceedingly torpid ; appetite very indifferent ; complains of continual pain, of a dull heavy character, in the upper part of the head, occasionally accompanied with nausea, and most severe sickness, that continues from one to three days, at each menstrual period ; the fingers, toes, and the tip of the nose were always cold, the catamenial flow was thin, pale, and irregular, and the ancles were swollen. Her medical attendants attributed her symptoms to that *ignis-fatuus* disease, indigestion and liver complaint, with a determination of blood to the head. At other times she was treated for inflammation of the brain, for which she had been cupped so often on the nape of the neck that it appeared all over like one eschar. Her head had been shaved and blistered a great many



times, also bled in the arm, in which also a seton had been introduced. All these, with abundance of medicines, failed to give permanent relief; but with low diet, such as tea and the like innutritious slop, her general anæmia was not only continued, but rendered her exceedingly susceptible to renewed attacks, and particularly the imaginary fearful brain fever, and its consequences on her mind. The latter was supposed by her friends to be unfortunately affected.

I examined the spine, and found the lower dorsal and lumbar vertebra, together with the sacrum, exceedingly tender. She felt sick and faint when the spinous processes were slightly rapped with my finger, and more particularly upon the first three lumbar vertebræ and upon the sacrum. In addition to the dark areola already noticed around the eyes, I observed that they were also sunk and dull, the brows depressed, the cheeks and lips bloodless, with here and there dark yellow blotches, giving the face the aspect of irritability, and incapability of mental action, having intolerance of light and sound; in short, the countenance was indicative of great despondency, apparently alive only to the soothing pity of her friends.

Her mind was continually harassed by gloom and melancholy, restless sleep, and terrific dreams, quick, small pulse, limpid urine, and thirst, whilst at other times the urine was high coloured, and the bladder irritable, frequently emptying itself with cutting pain.

## TREATMENT.

In consequence of the depleting plan having been so rigorously pursued for a lengthened period, I was first induced to try soothing remedies, such as morphin, internally, and aconite, and veratriæ, rubbed upon the sacrum and loins. In this plan, however, I was totally disappointed in relieving my patient; I, therefore, directed her to take a warm bath at one hundred degrees daily, and to take a pill, containing aloes, gamboge, and blue pill, every night, and a turpentine draught, with castor oil, every other morning. This draught irritated the kidneys and bladder exceedingly at first, but eventually she was enabled to take it without any inconvenience up to November; and after each draught, particularly at the commencement, she passed scybalæ, and rapidly recovered, and is now quite well.

I must, however, observe, that friction to the back was applied whilst she was in the bath, and also with veratria, every night for at least a quarter of an hour; and once in four or five days a mercurial pill was taken, in addition to the pill already noticed, because a gentle constitutional action of mercury not only improves the secretions of the liver and alimentary canal, as well as the secretions generally, but exerts a very beneficial influence on local congestions, be they active or passive in their character, especially when such other local and general treatment is instituted as shall favour its operation, and remove any obstacle to its local effects.

I felt assured that the head-ache, sickness, &c. that my patient laboured under did not depend upon inflammation, or on any other affection of the brain, as had been supposed, because when affections of the head exist the patient complains of rushing of blood to the head, especially on making any corporeal effort, or on stooping, and of more or less intense throbbing and lancinating head-aches, aggravated by the recumbent position, and particularly by the act either of suddenly lying down or rising up, with vertigo, tinnitus, aurium, scentillations, and other visual illusions, sometimes oppressive drowsiness, which so completely subdues the faculties both of mind and body, as to incapacitate the patient entirely for every species of exertion, besides the countenance, the conjunctiva, and sclerotica bear evidence with the superficial vessels of real affection of the brain, threatening inflammation, apoplexy, or amaurosis. Under such circumstances the evil is often averted by epistaxis.

#### CASE.

The following case published in the *Lancet* on the 8th of January, 1842, by Mr. Kimbell, of Knowle, is highly interesting, because it shows not only that spinal irritation may be detected externally, as some practitioners of late have denied to be possible, but that very dangerous symptoms, and simulating most extraordinarily hydrophobia, may be cured by simple remedial means to the source of the malady in the spine.

“ W. K., aged 24 years, of a bilio-lymphatic tempe-



rament, has, during the last month, suffered from occasional attacks of palpitation of the heart, occurring generally in the night, and invariably followed by profuse perspiration.

On October 4, 1841, he rode a distance of fourteen miles, and on arriving at the end of his journey at about twelve o'clock, A.M., he was seized suddenly with great difficulty of breathing, pain over the region of the heart, and painful sensations over the chest. The paroxysm continued for a few minutes, when the dyspnœa and pain gradually subsided; he afterwards ate a good dinner, and appeared as well as usual, until about eight o'clock in the evening, when all the symptoms returned with greater violence than before; and to so distressing a degree did the dyspnœa increase, that there appeared to be imminent danger of suffocation. He was now bled to eighteen ounces, but without any manifest relief, and the operation was repeated in three hours to the amount of six ounces, which had the effect of considerably relieving the pain.

About 5 A.M., October 5, I saw him. He could not speak, although conscious of what was passing around him. I was informed that he had had violent convulsive movements of the arms, which had lasted nearly an hour, and he now appeared to be suffering from spasmodic constriction about the glottis and pharynx, causing extreme difficulty of inspiration, which had a peculiar crowing character. He had likewise a great desire for water, and complained much of thirst; no sooner, however, was the fluid brought into his presence than it was

obliged to be withdrawn, the sight of it causing an alarming increase of pain about the larynx, with a horrible sense of suffocation; but with the removal of the water, the symptoms became ameliorated.

From so many hydrophobic symptoms being present, I was apprehensive he might have been bitten by a dog; so questioned him upon the subject very closely; but to all my interrogations he shook his head negatively. During the intervals of ease his pulse was full and soft, and averaged eighty beats in a minute; his tongue was clear, the bowels were regular, and the skin of the natural temperature.

Aware that there was a predisposition to spinal disease, I examined the *back*, and found about the lower part of the cervical region tenderness on pressure; and I observed that *this pressure invariably produced* an exacerbation in all the symptoms, and of this I fully satisfied myself and my patient likewise, by repeating the pressure three or four times.

#### TREATMENT.

A blister was applied over this spot; it rose well, and he soon became able to swallow doses of opium. An opium injection was administered per rectum.

I should have stated that, from the commencement of this attack up to the present period, he has experienced great difficulty in passing his urine, but none in voiding his fœces.

5th.—Much improved in every respect; but, when his

head was raised, the spasm was speedily reproduced. He had a constant smacking of his lips, and frequent twitchings in his legs and feet; the right arm partially paralysed; no head-ache, no confusion of intellect.

7th.—Still improving. The spasm had entirely disappeared. He could swallow fluid with the greatest ease. Tongue clean, bowels well opened, secretions healthy. He can now be raised without suffering. The blister discharges freely. The dorsal region was rubbed with an embrocation containing croton oil, tartar-emetic, &c., and quinine was given during the day, with kienbane at night.

From this period he gradually progressed, and at the end of the month was thought sufficiently improved to resume his avocation. One day, however, previous to his intended departure, he had a recurrence of the dyspnoea, but in a less degree than before. This was immediately treated by the application of leeches to the cervical region, followed by a blister, when all the symptoms soon vanished. He has two issues, one on each side of the cervical vertebræ, which discharge freely, and he may now be considered convalescent.

#### CASE.

A young gentleman, about 24 years old, having read my *Introductory Lectures on Nervous Irritation, &c.* was induced to consult me on the 20th of November, 1835. He said he had been very ill and weak for four years, and had consulted a great many medical gentlemen with-



out having experienced any benefit. He had a continual tingling heat over his body, more particularly in his legs and feet, which were also occasionally involuntarily jerked and cramped often at night. Until dinner he generally felt himself comparatively better, but an hour or two afterwards he had continual acrid eructation and head-ache, fulness of the stomach and bowels, dry heated skin, and a sense of giddiness or want of confidence in walking, noise in the ears, and mistiness of sight. During the night his sleep was broken and unrefreshing, troubled with frightful dreams, and frequent desire to urinate. His animal passions were totally absent whilst awake. Bowels constipated in general, but occasionally subject to violent relaxation. Appetite was bad, tongue covered with a dirty white film in the morning, and, in the evening, of a glossy brown colour. The lumbar region and the sacrum I found generally tender to pressure, and he said that he frequently experienced pain and tenderness at the very extremity of the spine, and which I found, on pressure, readily excited. He also informed me, now that his attention was directed to the spine, that he frequently felt a soreness in it, betwixt the shoulder-blades, and pointed with his hand to the sixth and seventh dorsal vertebræ as the most painful parts, although he said the pain and soreness of the muscles radiated upward and downwards, and on each side of the spine. His head-ache, acrid eructation, and fulness about the stomach, were upon those occasions worse.

My patient was of the serous biliary temperament, his pulse soft and slow; the little flesh he had remain-

ing on his bones was flabby, and his skin wrinkled. He had lost, he said, near three stones weight. He looked twelve or fifteen years older than he was. His moral feelings were passive, and dependent on those around him, with as little energy of mind as of body; I, therefore, did not explain to him according to my usual custom my views of his case, and my remedial plan to enlist his energetical co-operation,—always an important advantage when it can be obtained.

His questions were few and very difficult to be answered. “Can you cure me, and in what time?” When I told him that I was no prophet, and that I never made promises beyond doing my best, whilst the patient aided my views, by strictly adhering to all my directions, he said he did not know what more could be done for him; for one set of practitioners pursued the plan of simulation, and the other starvation, and the third simulation by doing no good and not much harm, and together pretty nearly killed him, and that if I completed the latter, he thought there would be no great harm, since he was good for nothing.

I said it was true that the disease had left apparently but little to be done; but as it was exclusively my practice to relieve or cure my patients, I asked him if he could submit to lie down on his back for some months, if necessary, to have his back rubbed by one of my rubbers every day for half an hour, and to have two or three leeches applied weekly, on the different tender points on his back, to wear a padded shield to fit his spine, in order to support and take off the weight of the head and trunk from the spinal column, and to keep its muscles

quiet, and to swallow but little or no medicine. He said he would take time to consider of the plan.

I did not see any thing of him for some time ; but in about a month I was requested to call upon him. I found he had called upon one or two of his former medical attendants, to consult them about the proposed plan. None gave him any encouragement, but on the contrary, one gentleman eminently commanding the confidence of the public, said he would lose his little remaining strength for want of exercise in the open air, and in short would derive no benefit upon the whole, and most likely would be made worse, &c. However, in spite of all these arguments, he had determined upon submitting himself to my mode of

#### TREATMENT.

I obtained a properly constructed bed, or rather a crib ; he was placed on it, and in less than six months he had not only recovered his health, but also his flesh and strength, and he resumed hunting in the following March, and has still continued to do so, in good health.

I could relate a case of an elderly gentleman, who had an affection of his kidneys, bladder, and prostate gland, who derived by the same plan of treatment, with but very little variation in detail, so much relief, that he has enjoyed his life, (though not cured), which he had not done before for more than twelve years ; although he had been all that time under medical advice of some respectable practitioner or another.



I remember another case of a young gentleman, who had spasmodic stricture of the urethra, and otherwise much out of health, and in a very low desponding way, who was cured by the same remedial principles, in about eight months, after various plans had been tried during eighteen months, and failed even to relieve him.

#### OBSERVATIONS.

These cases are frequently brought on, in the first instance, by over action of the muscles and ligaments, by external violence, or strains by dancing, jumping, wrestling, hunting, or by exposure to heat and cold, rheumatism, &c. The structure of the vertebræ intervertebral substance of the spine, and its surrounding membrane, is equally subject with other parts of the body, to irritation and inflammatory action, either in the acute or chronic form.

When morbid action is excited in the exterior parts of the spinal marrow, it may as readily extend to it, and its nerves, as when it commences in the latter organs ; and spreading outwardly it affects either proximate or remote organs, and cannot be cured, without securing perfect rest of the spine, which can only be effected by keeping the patient within a properly constructed shield, in the horizontal position. Irritation or chronic inflammation, of that portion of the membrane of the spinal marrow which is reflected over the bone, is caused possibly by the increased thickness, and consequent pressure, of the membrane upon the spinal marrow, or of its

nerves, at their exit from the spinal canal ; and thereby may produce paralysis, and various other complaints, often little suspected to be in any way dependent upon the spinal column.

I do not wish to be understood that rest is invariably necessary to cure cases depending upon such causes as above described ; for I am well aware that by leeches, bandages, plasters, liniments, friction, and spinal supporters, the more simple forms may be successfully treated, as the many cases I have adduced amply prove.

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## CHAPTER XI.

### CASES.

THE following extraordinary cases, which were seen by most of the leading practitioners in London, before and after they were cured by Drs. Harrison and Serny. Through the kindness of Dr. Serny, I have also seen Sarah Hawkes and Emma Wood since they have been perfectly cured of their spinal distortion and dreadful state of health.

I transcribe the cases from Dr. Serny's practical work, to show not only what dreadful symptoms spinal affections are capable of producing, and such as can be remedied by a proper plan of treatment, and how generally the examination of the spine is neglected, and the treatment of diseases dependent upon it is misunderstood by even the leading practitioners :—

“Emma Wood, aged 20, is of delicate constitution, only three feet and eleven inches in height, her figure greatly twisted, bending very much to the right. The thigh and the leg of the same side are longer than their fellow, so that, when on her feet, she rests chiefly on her right limb. The elbow and wrist joints are much contracted inwards, forming nearly a right angle, and have little motion: the fingers are bent, and pressed close into the palm of each hand: the knee-joints, which



she can move but little, and that not without some effort, are similarly contracted. The skin around these joints is dark, mottled, and, as it were, tinged with blood. The shoulder, hip, and ankle joints are more flexible, but are painful if moved freely.

She is and has been, for the last seven years, unable to stand or walk without aid.

During the last *six months* the power of swallowing food, except in small pieces, has become more and more lessened, and she is unable to sit in an upright position for more than half an hour at a time.

Appetite very small, bowels constipated, frequently requiring medicine; menses not regular, urine discharged with great difficulty, and in small quantities.

On examining the spinal column, it presented a semi-lunar arch to the left, the hollow being to the right. The vertebræ were luxated; the spinous process pointing towards the hollow, the transverse process being depressed on the same side. The ribs were thus forced outwards, forming an elevated arch; the small of the back preternaturally hollow: the figure being bent so much to the right that the spine of the ilium, on the same side, is forced under the false ribs. The chest is much twisted, the right shoulder and the ribs on the same side being thrown forward; and from this disposition of the breast, the left *mamma* appears considerably smaller than the right. Such *were* the appearances.

### *History of the Case.*

Emma Wood was attacked first with weakness in the

joints, when six or seven years of age, attended with great pain, especially in the hip, generally commencing at night in bed. This pain was so severe, and her screams so loud, that her mother was obliged to inform the watchman of the cause, that he might not be alarmed. The sensitiveness of her body was then such that the lightest covering produced great pain and oppression.

In this state she continued with little interruption more than three years, in which time the joints had become contracted as before described.

During this period she was seen by many eminent medical men. In 1822-3, by Mr. V. frequently ; by Sir — once ; by Mr. M. twice, and by Mr. S. frequently.

In 1825 she was admitted into Saint George's Hospital, under the care of Mr. J., acting for Sir Everard Home. Warm baths and frictions were used ; but, after remaining seven weeks, her health became so much worse that she was advised to go into the country.

Dr. C. saw her in 1826, at the Aldersgate-street Dispensary, and pointed out the case to several medical men, declaring that every joint in the body was more or less affected, and that nothing could be done for her.

In 1828, she began first to express an unwillingness to walk, complaining of weakness in the loins and of numbness in the lower limbs. These symptoms rapidly increased, so that, very shortly afterwards, she became unable to stand alone upon her feet. About this time her mother perceived that her figure was bent to the right side.

In 1833, she obtained admission into St. Thomas's

Hospital, under Dr. R., where she remained two months ; thence, by his recommendation, she went to the infirmary at Margate, where she had the warm sea water baths. Afterwards to Bath, and was seen by Dr. B. and Mr. K. and returned home in 1834, in a state of health worse than before.

During this whole period no medical man, who had been consulted, *examined her back*.

On January 15th, 1835, she was brought under Dr. Harrison's mode of treatment.

### *Progress of Cure*

On May the 1st, fourteen weeks after Emma Wood had commenced the treatment, a considerable improvement was perceptible. The hollow in the loins had considerably diminished, and the spinal column had increased in length more than two inches. She has greater power of *motion* both in the wrist and the knee-joints, and the mottled dark complexion of the skin around these joints has nearly disappeared: the skin generally has much improved in clearness and colour.

January 1st, 1836.—Emma Wood has continued improving. The chest has, in a great measure, lost its twisted appearance. The ribs, on the left side, which were huddled together, have some intervening space between them: the fingers, formerly pressed into the palm of the hand with such force that the nails wounded the flesh, are now removable: all the joints are more flexible, and the skin is much clearer and brighter.



This case, from the commencement, was under Dr. Harrison, myself, and Mr. Thornber, but the latter gentleman became afterwards the chief attendant for two years, we occasionally calling, when Mr. Thornber became unwell about September, 1837, at which period Dr. Harrison requested me to take charge of the case. To do justice to Mr. Thornber, I ordered a fresh cast to be taken, that he might be gratified with the progress that had been made during the time of his attendance.

From this period Emma Wood has been under my care ; and as it has been a very extraordinary and a difficult case, the progress has been going on slowly, the machinery having been obliged to be frequently changed.

The result has been favourable beyond all possible expectation.

#### THE CASE OF SARAH HAWKES.

November, 1831.—Sarah Hawkes, in the 14th year of her age, is small, and of delicate constitution. She was afflicted with a most extraordinary contortion of figure, amounting to almost the highest degree of deformity. The inferior extremities, which have almost wholly lost the power of motion, have their sensibility morbidly increased. The toes are turned inwards, and press upon the soles of the feet, with such firmness, that they cannot be moved, even by considerable force ; the nails not having been properly cut from the commencement

of the ailment, and not at all for these last three months, in consequence of her being unable to bear the handling of them for that purpose. The hip, the knee, and the ankle-joints are stiff and immovable; the knees and the ankles resting firmly upon each other respectively; the right arm is lodged between the thighs, with the hand turned upwards; in this manner it has been confined during the last two years. Her trunk and lower extremities are retroverted to such a degree, that the feet rise above the left shoulder, and can be there laid hold of by the patient with her left hand. The fore part of the trunk and the inferior extremities describe together more than three quarters of a circle. The fore part of the crest of the right ilium actually passes five or six inches under the edge of the sternum. The right buttock is forced under the scapula of the same side. The middle of the spinal column presents the shape of a horse-shoe, with the fore part of the shoe slanting upwards, and the back part turned into the right flank. In this strange and distressing position the patient is obliged constantly to remain; having lived, for the last two years, entirely upon milk and the pulpy parts of fruit, either fresh or dry. The pulse is feeble; appetite languid; respiration always difficult, but more so when the atmosphere is moist, or any one stands near her bed. Her voice is weak, and the utterance of a few words exhausts her. The right cheek and the arm of the same side frequently assume a blackish hue *simultaneously*, and, on these occasions, breathing becomes so laborious and irregular that death is expected every moment, and sometimes appears to have actually taken place. Her

breath emits at all times a disagreeable odour : the heart also appears to be raised considerably from its usual site, and frequently palpitates, conveying a very uneasy sensation, which she herself describes as a violent fluttering in the upper region of the chest.

On account of the awkwardness of her posture, the *urine is necessarily received upon folded cloths* ; and she is frequently called to void it. This fluid is very offensive ; she knows, however, when it escapes, and can, for a few seconds, retain it.

The *fæces are discharged involuntarily and unconsciously, upon the right cheek ; and, if not prevented, would glide into the mouth, the head being fixed immovably to the sternum*. The evacuations are always dark and foetid ; when solid, of large size, being retained longer than usual, in consequence of the sluggish action and the insensibility of the rectum.

She herself accounts for the origin of this distortion from the circumstance of having received on the neck, from the fist of another person, a blow, of so violent a description as to drive her over a form, when she fell down in a fainting fit. On recovering her senses, and attempting to eat her dinner, she was alarmed at finding a difficulty in swallowing, and by perceiving an unusual lump in her throat, both of which still remain.

In the front the lump is very conspicuous, and nearly the size of a pullet's egg, cut in two lengthwise. The posterior surface is uneven ; but there is a particular indentation in the lower part. The cervical vertebræ are huddled together, forming an irregular tumour. By these subluxations, or misplacements, the chin is pushed



over to the left, and made to rest continually upon the chest.

In little more than a week after the violence alluded to, five or six fits of a similar nature were experienced. Soon after the first she had pains, attended with cold and heat in the loins, and lameness in the right hip.

These continuing to increase, she was compelled, after several ineffectual struggles, to confine herself to bed, on August 28th, 1828, and never since that period has she been able to rise.

About five weeks after she was thus confined, she was visited with a peculiar and indescribable sound in her back and head, resembling the cracking of the fingers, or the snapping of a stick—the report being distinctly perceptible in the room below. It began at the bottom of the spine, ascending rapidly to the lower part of the neck, accompanied by an increase of heat through its course; this was again, however, quickly followed by cold in the same parts; arrived at the neck, the noise was there loudest.

At this epoch the right arm became violently agitated, the left was suddenly drawn back, with the fingers bent and stiff, the eyelids opened and shut in quick succession, vision became indistinct, and the voice failed. The chin was forced upon the breast with strong convulsions, while the mouth remained wide open.

After the pause of a few seconds, the snappings darted again into the back of the neck, now ascending to the top of the head, where they suddenly stopped, making, at the time of their cessation, an unusually strong report.

The mother of Sarah Hawkes described the course of these noises with the greater confidence, because at night she lay with her own head close to that of her child, in order the better to trace the order and the movements of this singular phenomenon.

When the noise reached the head, it was accompanied by greater heat than elsewhere, (perceptible to other persons besides the patient), and a greater degree of cold invariably succeeded. The vertex and the sides of the head were also, for a short time afterwards, so benumbed and insensible, that she could not feel a smart stroke or pinch inflicted upon any part of them.

In this way the rattling continued, incessantly harassing the poor girl for more than a month; at the end of which it entirely ceased. On first hearing the sounds, (and for some time afterwards,) her mother was so fully convinced of their proceeding directly from the ribs, or from the vertebræ rubbing against each other, that she frequently turned the child, expecting to see an evident movement in some particular part, and thus ascertain the exact spot whence the noise proceeded; but these examinations always ended in disappointment, for neither she nor any other person, after bestowing the greatest care and vigilance, could perceive the slightest disturbance, either in the spine or the ribs. Both were, at all times, tranquil.

No unusual motion could be observed or felt, although the crackling was audible enough, and, apparently confined to a particular spot, to which eyes and fingers were both directed.

After this perplexing symptom had taken its departure, she became *constipated in her bowels*.

*During twenty-nine successive days no alvine evacuations took place*: the abdomen became exceedingly swollen, and was very painful, while there was a remarkable glistening of the integuments. About the same time she was attacked with frequent spasms in the face, eyes, and right hand, but most of all in the mouth, the chin being now drawn down upon the sternum, where it remained fixed for fifteen weeks and three days. During this period she lay speechless, with her mouth continually open, excepting when forcibly closed with a bandage. It at last *suddenly and spontaneously shut*; and, in the course of an hour, she was able to speak a few words.

This attack was scarcely over before the body, and, after it the limbs, began to *bend backwards*; but there was no return of the fits, cramp, or spasms. Her deformity, increasing for three months, at length attained its present magnitude. From that time matters have remained nearly stationary; and, during the whole period, in spite of her melancholy and helpless situation, the general health has remained unimpaired, with the exceptions already mentioned. In the course of her confinement she was *bled* repeatedly in the arm, and had *setons, issues, blisters*, and *leeches*, successively applied to different parts of the back; but neither they, nor any of the routine means usually employed, at all relieved the symptoms, or retarded the progress of the complaint. Before she left her native place, (Dunmow), she was examined by not less than forty medical men, some of



whom went from the metropolis, and more distant places, for the purpose ; she had been removed to London, and exhibited there upwards of a month, before Dr. Harrison heard of her. The first object of this journey was partly to obtain alms ; but chiefly to procure, if possible, some alleviation of her afflictions, through the benevolent exertions of the faculty. An amiable young lady, whose figure Dr. Harrison had restored, (by which means she had been rescued from pulmonary consumption,) informed Dr. Harrison of Sarah Hawkes, and desired him to “ visit the poor girl, as an object of compassion and wonder,” not having the slightest idea that any relief could be administered.

*Dr. Harrison, having carefully examined into the case, undertook the cure.*

#### TREATMENT.

November 15, 1831.—He commenced the treatment, by thrusting folds of soft linen between the knees and the ankles, in order to separate them. On the day following he could stir the arm a little. Upon the 19th, the limbs being considerably parted, he had the pleasure of removing the arm from its long imprisonment ; but so great was the pain upon taking it from its confined situation for a few minutes only, that she *urgently desired to have it replaced.*

Having disengaged the arm, Dr. Harrison directed his attention to the back, in order to ascertain the ex-

tent of the deformity, and devise appropriate means of treatment.

Upon turning her over for this purpose, great irregularities were found in all the cervical vertebræ; one of the lower was driven forward, leaving an evident hollow behind.

He resolved upon stretching the neck, hoping by this measure to replace all the vertebræ,—an experiment which led to the immediate restoration of the natural state and the appearance of the neck.

Frictions, from the first, were almost continually applied to the arm and the scapula, in which parts the power of motion was rapidly increased; and, on the 22nd, (seven days only from Dr. Harrison's beginning to attempt relief,) the arm was finally released, and restored to perfect liberty; and, though weak, she could move it in every direction, as well as the other.

November 24th.—Sarah Hawkes was this morning carried from her bed, (where she had lain, without removal, curved in her body and limbs as described, for more than *three years*,) and, soon after the removal, she *threaded a needle with her right hand*, which had been fixed between her thighs.

27th.—She had been turned upon her face for the last three days, in order to permit a sketch to be taken of her back, as well as to have it and the cervical vertebræ well rubbed. In this posture she remained for six or eight minutes, the first time, and has borne the change better upon every repetition. The tumour of the cervical vertebræ, on the outside, is entirely reduced, and the neck sensibly elongated. She now swallows with ease,

and says that the lump, which she had felt in her throat from the time of receiving the blow, has, since the extension of her neck yesterday, the 26th, quite subsided.

30th.—Has eaten two boiled eggs, and bread and butter several times, with great pleasure.

A shield was yesterday forenoon placed upon the back, and confined *in situ*, by means of a pair of stays. The unnatural and unsightly hollow of the back was filled up (almost entirely) with linen and tow. The hollow of the back is already diminished, and the front of the body is straighter. There is great tenderness in the whole spinal region.

December 8th.—Since last report she is, in every respect, much better. She can now move freely every large joint of the lower extremities, and, to a considerable extent, in whatever position she may be lying. The right arm and hand have, for several days, been quite well, and the protuberance in the left side of the abdomen is nearly gone. The hollowness in the loins is also much lessened, and the muscular enlargement of the left side of the spine has almost disappeared. The tenderness of the back too has nearly subsided, for she can now bear to have it smartly rubbed for a considerable time, and even derives pleasure from the operation. She is in good health, is more plump, and generally much improved in appearance; sleeps well, and swallows with perfect ease.

December 20th.—The patient is, in every respect, better; the limbs have freer action, and the fore part of the trunk exhibits but little deformity. The lumbar hollow is also reduced; the muscular enlargement is



nearly gone; and the only tenderness remaining is over the eighth dorsal vertebra, where *the seton was formerly placed*, which had been kept open seven weeks and then dried up, without having afforded any relief.

January 10th, 1832.—She daily improves: has the proper feeling and free use of all her limbs. The right arm has, for some time, recovered its natural strength; but, though the lower limbs are active, they are still weak. The only defect remaining in her back is a slight curvature in the lower dorsal and upper lumbar portions of the spine, with a slight hollowness on the left.

February 12th, 1832.—Her health continues excellent: she sleeps well, and increases in flesh. The slight remaining curvature is confined to the three inferior dorsal vertebræ, which were formerly the most distorted.

The feet have recovered, and to all appearance, have regained sufficient strength to sustain the whole weight of her body; though the right (which was always the weaker,) is still more infirm than the other.

May 8th.—Of late there has been no perceptible difference, either in the strength or the activity of her limbs; attention has, therefore, been chiefly directed to the vertebræ. Two of the vertebræ have, for some time, been wholly replaced; but the middle one, (which formed the top of the præternatural arch), having still resisted the means employed, and continued a little out of the line, means were employed by which the vertebra was compelled to enter the column, and was restored to its natural situation. Under this treatment the recession daily became less, and the replacement easier;

rectification proceeding until the bone resumed its proper and permanent place in the spinal column.

July 24th, 1832.—Since last report the vertebræ have remained stationary. The spinal column has also been repeatedly examined, both before she left the crib and after returning to it, by experienced practitioners, several of whom were entire strangers to Dr. Harrison, and was declared to be perfect.

Sarah contindes to enjoy excellent health. She has walked for a few minutes in her room six different times, at intervals of a week. She has the unrestrained use of her lower extremities, moving them freely in every direction, both in bed and while on foot.

Sarah Hawkes was attended by Mr. C. W. Hoyland, surgeon, for three years, under the superintendence of Dr. Harrison, till the year 1833, when it was perceived that her deformity was returning, as one of her legs had become shorter by one inch, which had been occasioned by a fall in walking.

By Dr. Harrison's special desire she was placed under my care, to undergo the treatment over again for two years. I at first immediately replaced the sixth dorsal vertebra: she experienced two attacks of typhus fever, each accompanied by the discharge of an abcess inwardly, from which her constitution suffered greatly. Sarah Hawkes is now perfectly recovered, in good health, and able to walk several miles, and is not a little proud of her figure.

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THE CASE OF WILLIAM SUTTON, *aged 37 years, residing at 3, Petty's Court, Hanway Court, Oxford-street, by Dr. Serny.* A SPINAL AFFECTION, ATTENDED WITH LOSS OF USE IN THE LEGS.

This patient, when walking, May 2, 1836, over a cellar flap, fell through into the cellar, and came down on his feet ; the distance he fell about nine feet.

The shock, his weight being one hundred and ninety-six pounds, caused a feeling of stupor, which rendered him for a short time unable to move. The stupor having disappeared, and feeling nothing except that his left ankle was sprained and very painful, he proceeded to his work.

The following morning his loins were very painful and stiff, and he could not stoop. He experienced also great pain down the outside of the left leg and round the ankle, with shooting pains to the toes. The day after he was still worse, being obliged to keep his bed, being unable either to sit or stand.

Mr. H. was consulted, who called the disease rheumatic fever, and did not regard the fall at all connected with it. Mr. H. attended the patient nine weeks, who was then able to walk about a little, but had still bad pains in his loins, which now returned worse than before ; and, in a few days, he again became unable to sit or stand ; indeed, was quite helpless, and was taken to St. Bartholomew's Hospital, and remained under the care of Dr. R. for two months. He was then treated for rheumatism, hot baths every other day, with cupping, blisters, and medicine containing colchicum.



Becoming no better he returned home, and was attended for six months by Dr. P., of the Bloomsbury Dispensary, who used the same treatment as that adopted at the hospital.

Not recovering him, Dr. P. resigned his patient, who was attended by Dr. E., of the Westminster Dispensary. Dr. E. treated him for two months, when, finding no beneficial change, he examined him more minutely, and declared the *spine to be affected*, and resigned the patient to Mr. S., the surgeon to the dispensary.

Mr. S. ordered needles to be used in the loins, a blister over the same part, and then a seton, which was kept open two months.

During the whole of this period, the patient could not use his legs, which were destitute of feeling and deadly cold ; when his bowels acted the pains in the loins were agonizing ; his water was thick and of a very unpleasant smell. Mr. S., at last, stated, he could *do nothing more for him*, as he was paralysed.

In the two following years, William Sutton was under the treatment of several other practitioners, but derived no benefit.

At length, by the assistance of a few friends, he was placed under Dr. Serny. In nine weeks, after commencing his treatment, his limbs obtained their natural feeling, the pains complained of had disappeared, and on September 1st, 1839, he was pronounced well, his back being restored to its natural condition.

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This case is highly instructive. Here is a patient treated for years for a rheumatic affection: every means used to relieve this affection, under the guidance of the most enlightened members of the profession, and these means are used without *any reference to the origin of the malady*.

One physician, at length, is led to suspect that some affection of the spine exists: he is satisfied that it is so: the patient is transferred to a clever surgeon, and the usual surgical treatment is adopted, but without success. The patient is then placed under Dr. Serny's care, and health was rapidly restored.

CASE OF OUTWARD CURVATURE, ATTENDED WITH AFFECTION OF THE HEART, AND AFFECTION OF THE SIGHT, *cured by Dr. Harrison.*

Mr. C. D., aged 24, of a delicate habit, has been a long time indisposed. He is subject to *severe palpitation* of the heart, from apparently slight causes—great tightness over the stomach, and want of appetite. He swallows with inconvenience, and reading aloud soon tires him. The eyesight has gradually got worse for several years past.

He used to amuse himself with gardening; but has been obliged to desist, because, on stooping, his face became uncomfortably swollen and red for a long time afterwards. He also felt a dull, heavy pain in the upper and inner part of his head. He suffers great uneasiness in the right side whenever even slight pressure is made

on the edge of the ribs, or immediately below them. All the false ribs on that side are flat and protuberant; the liver has in consequence been forced upwards and driven out of its proper situation.

He has taken an aversion to common diet, and relishes only fat meats, butter, or food prepared with warm condiments. The left arm is very weak, and often nearly insensible. The lower limbs are numb and cold; they are subject also to clammy perspirations and convulsive twitchings. Bowels constipated, urine very turbid, of extraordinary colour and disagreeable smell, pulse frequent; the whole of the spine lying between the shoulders is considerably arched, and rises so much above them as to be quite unsightly. The small of the back is disagreeably hollow. This prominence is occasioned by the subluxation of three of the cervical, and five of the upper dorsal vertebræ, all of which are tender, stand irregularly, and at unequal distances from each other.

He imputes his complaint to the fatigue of riding on horseback when in weak health, when he fainted repeatedly from the exertion.

He has consulted several of the most eminent of the faculty within the last few years. No one of them entertained the same opinion of his case. Some declared him to be consumptive, and recommended a mild climate, others referred his disorder to the liver, and others to the stomach.

May 5th, 1820.—The eight vertebræ, formerly described, have been for some time, restored to their natural situations. The curve is entirely removed, and the part



sunk into a groove, of nearly an inch in depth, below the shoulders. The hollowness of the loins is not more than natural. The spine, in consequence of these alterations, is become straight, and remarkably well-shaped. The ribs on the right side have been made to resemble those on the left. The palpitations have entirely left him, and the tightness of the stomach is removed; the weakness and the numbness in his arms and legs are no longer experienced. Has not lately had spasm or clammy sweats, and the feet are much warmer. His looks have considerably improved, and the urine is natural. He has taken *an aversion to fat*, in every way, preferring lean meats, with a proper mixture of vegetables. The diet is natural, and appetite good.

July 20th, 1820.—He is quite well in health, and feels his back gaining strength daily. The liver, having fallen into its natural situation, the tenderness, formerly mentioned, is nearly gone; it had constantly troubled him for the last ten years.

September 18th, 1820.—The eye-sight is entirely restored. Deglutition is easy, and reading aloud no longer fatigues him. He returned home this day, in very good health and spirits.

November 29th, 1820.—The tenderness over the liver, and all the other complaints, having entirely left him, he has lately ventured to take walking exercise in the open air. This recreation is performed with ease, producing no fatigue, nor is it attended with any uneasiness of the back.

July 10th, 1821.—The patient continues to enjoy good health.

This case was attended by the late Dr. Harrison, whose method and practice is continued with great success by my friend Dr. Serny, whose practice I have witnessed for some years past, and have assisted him to perform subcutaneous operations of division of the muscles of the spine, for lateral curvature, in a great many cases, and have since adopted the practice with the utmost success in many cases under my own superintendence.

#### OBSERVATIONS.

The above cases, like many others, confirm that both remote and immediate organs with the spine may be seriously affected by disease in the latter; and I am satisfied that, in such instances, no relief can be afforded to the sufferer, but by curing the original disease in the spinal column.

The late very talented Mr. Bampffield, in his able "Essay on Curvatures and Diseases of the Spine," mentions cases where the liver and heart became displaced, by the pressure of some displaced vertebræ. Indeed, many other authors have likewise published such cases; and Mr. Tuson, in his useful work on Curvature of the Spine, after relating a very interesting case, makes the following remarks (page 188):—

"Disease of the spine may continue for some time, and the patient be not aware of the cause of his sufferings, which, in this case, was eventually found out by the mother of the patient brushing his clothes. By

constant pressure the lungs yield to the shape of the chest, becoming collapsed, and therefore unable to perform the function of respiration, or the arterialization of the blood. The heart in this case was moved somewhat out of its proper position, and the ribs took the shape of that organ."

Thus mechanically, from pressure of an organ, serious functional or organical disease of different organs may be produced, as well as by irritation of the spinal nerves from other causes, without displacement of any of the vertebræ.

Mr. Bampfield has enumerated the following affections and derangements of organs arising from spinal affections; and being in confirmation of cases that I have given, I beg to transcribe them:—

"The stomach is very often affected with indigestion, loss of appetite, or a capricious one. There is also a sense of constrictive tightness or pain across the epigastrium, especially at night, referred to the morbid condition of the nerves of the stomach. The bowels are frequently costive, and require the aid of purgative medicines.

"In other cases, even where dissection has subsequently disclosed several bodies of the vertebræ destroyed, the digestive functions of the stomach and the action of the bowels have been preserved as regularly as when the patient has been in rude health.

"In some instances, that are rare, the sphincter ani has been affected with paralysis, and an involuntary discharge of fœces has taken place.

"Part of the liver is sometimes detruded below the



edges of the false ribs from the new situation of internal parts. Its secretory functions are sometimes impaired and become torpid, so that the fœces are clay-coloured or muddy. Tubercles have also been found in the liver.

“The kidneys and bladder are sometimes morbidly affected. Thus I have seen the urine both clear and cloudy, and depositing both the white and the lateritious sediments. The sphincter vesicæ is sometimes affected with paralysis, giving rise to incontinence of urine.

“When the perversion of the natural situations of the viscera, of the great blood-vessels, of the ganglionic system of nerves, and of the thoracic duct is contemplated ; when the structural alterations and deviations of position of the lungs, heart, liver, and some other of the viscera, aorta descendens, venæ cavæ, thoracic duct and some of the nerves are considered ; when the derangements of the spinal chord and spinal nerves, of the abdominal and intercostal muscles and diaphragm, and the curvature and shortened spine are weighed ; when we view the spinal marrow, thus deranged, as the principal seat of sensation and motion, and know the spinal nerves are distributed to all the viscera contained within the thorax, abdomen, and pelvis, and supply them with the nervous energy necessary to their important functions, as well as to the muscles of the upper and lower extremities, back, chest, diaphragm, and all the other constituent parts, besides possessing a connexion with the nerves of the brain through the ramifications of the great sympathetic ; when we reflect on the

aggregate of disorder and displacement of the framework and the frame, we cannot be astonished at hearing an appalling catalogue of maladies which are attendants or consequences of spinal deformity and disease.

“A catalogue, whose history and treatment to pursue and dwell upon in this dissertation, would make it almost endless; for I have known the head affected with severe pain, occasionally predisposing to phrenitis and death; the eyes affected with convulsions, and imperfect vision; the ears with deficient hearing; and I have witnessed, as companions to curvatures of the spine, dyspnœa, asthma, congestion, and inflammation of the lungs; imperfect oxygenation of the blood; palpitation of the heart; aneurisms of the aorta; a chorded tightness across the epigastre; gastrodynia: indigestion, loss of appetite, or a vitiated state of it; torpor of the liver, or deficient secretion of bile; constipation; discolored fæces; morbid secretions of the kidneys; involuntary discharge of urine and fæces; a variety of nervous feelings; epileptic fits; numbness and coldness of the extremities; tic-douleureux-like pains about the joints of the lower extremities and muscles, and of the posterior part of the ileum; paralysis of the upper and lower extremities, and an almost universal torpor.”

It must be evident that such severe affections that come on frequently very gradually, can only be remedied in a corresponding degree; and in the following remarks of Mr. Tuson I fully concur (page 121):—

“From this and other cases that have come under my care, I am persuaded that, to accomplish a speedy and certain cure, the patient must be under the constant super-

intendance of the medical practitioner, who must strictly observe, that the exercises and extension are regularly and effectually persevered in.

“I can see no difference between cases of this description, and others in which the practitioner is in constant attendance; and I would impress this forcibly on the minds of those medical men who undertake the charge of similar cases, for the most effectual means of cure may be frustrated if their execution is left to others.”

Many cases might be here detailed in proof of this, which however would only cause an unnecessary digression from our subject.

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## CHAPTER XII.

### CASE.

John Williams, gardener to Brompton-square, was desired by one of the inhabitants, a patient of mine, to consult me.

This man had been a patient at St. George's Hospital for a long time, and occasionally of a Dispensary in the neighbourhood. The medical officers of those institutions regarded his symptoms as arising from an undue determination of blood to the head, and ordered him to be cupped on the nape of the neck, and take purgative medicine, and to live upon very low diet, with little or no meat.

Every time he applied for relief at these institutions, and principally at St. George's Hospital for nine years, not one of the medical officers differed in the mode of treatment, or succeeded to afford him but temporary relief. This lowering plan necessarily kept him very weak to contend with the requisite labour of his appointment, and his anxiety to support his wife and a large family of little children. These circumstances induced my patient to send him to me, on the 1st of November, 1839. He was about 34 years old, of the nervous serous temperament, having light hair, thin clammy skin, flabby muscles, pulse small and irritable, tongue covered

with a dirty white moist film, and more particularly on the left side. He said he had continually pain on the top of his brain, shooting backwards occasionally. He was so giddy as to fall on his head whilst digging. Sometimes he was sick, and often experienced dimness of sight and noise in the ears, and always felt a want of confidence in regulating his walk, particularly in the streets. His appetite was indifferent, bowels regular, urine pale and over abundant, and frequently passed.

On examining his spine, I found that his sacrum was very tender, and that his head was better when lying down. These circumstances, together with his heels being puffy, convinced me that the head affections arose more from want of blood than too much, as is most commonly the case, and that apoplexy is less to be feared than venous congestion, which I have known often to produce amaurosis, and cured by the same remedial principles that I adopted in this case.

#### TREATMENT.

I ordered a mercurial pill every other night, to be followed in the morning by an ounce draught of castor oil and turpentine in equal proportions, every second morning, and to live upon dry food, as meat and bread, and to have the spine and sacrum rubbed with a stimulating liniment for twenty minutes every night.

November 10th.—Said he was much better, and that he had passed a very extraordinary quantity of scybalæ, exceedingly hard, which astonished him, particularly

since he had taken so much aperient medicine. He said that his head-ache was considerably relieved after the first draught.

I desired him to continue the remedies as before, and to call again in a week.

December 1st.—He said that as he felt his strength returning daily, he did not consider it necessary to call a fortnight ago as I had directed him to do, but continued regularly to take the medicines and use the liniment for a fortnight. For the last week he has neither taken the medicines nor used the liniment, because he felt quite well, in which state he has continued ever since.

#### OBSERVATIONS.

This man's memory became considerably deteriorated during his illness. Frequently he complained of his ideas being confused and unconnected, with a continual fear of falling. This cerebral or mental disturbance I felt assured was sympathetic with spinal irritation, although there is no other organ but the brain, as Doctor Cowan observes, "whose injury or removal directly interferes with mental functions, unless life itself be involved, and delirium or mental aberration is universally regarded as a symptom of cerebral disturbance ; indeed, it is demonstrable that the brain is the instrument of thought, and that there is no instance on record of mind being manifested without a brain ; and idiocy is inseparable from a brain of certain dimensions. Persons having a



brain weighing but one and a half pound are invariably idiotic.”

The cerebral and spinal nervous system are so intimately connected, that, when one is influenced, the other is simultaneous ; yet the primary source of the symptoms may be generally traced by attending to the following points :

First, the temperament of the patient, then the history and hereditary biography of constitutional tendencies or suffering, and to ascertain former and present exciting causes, incipient and present symptoms, condition of the nervous and vascular systems, countenance, sensations, functions, and progress of symptoms, sympathies and results.

#### CASE.

Mrs. H——, Devonshire-place, aged 40, consulted me in April, 1840. She is a very large woman, of a phlegmatic temperament, with a sallow complexion, lax muscles, and unduly covered with cellular substance. Whilst suckling her last baby, she became exceedingly lethargic, and felt giddy on changing the position of her body, and particularly in the morning, after rising from bed.

Her medical attendant at first directed her to wean the child, and ordered some aperient medicine, and leeches to the temples, and blister to the nape of the neck.

Although this plan had been pursued for six weeks with some advantage, it did not restore her health.

When I saw her, the symptoms were as formerly, but mitigated. Her tongue was of a yellow brown colour, breath very offensive, bowels never relieved without the aid of medicine, appetite bad, thirst great, pulse sixty-six, and full, but soft, urine pale and copious, her catamenial flow had returned since she had weaned the child; but, as usual, or at least very common, when the menses ceased, or being interrupted, then she was deluged with leucorrhœa: her head-ache was of a dull character over the eyebrows, with occasional dimness of sight and noise in the ears. Her spirits were not depressed, but she was apparently indifferent to all things.

Since she had taken aperient medicine daily and confined her diet to some light puddings and broths, it was difficult to decide whether the bowels were really constipated or not, and if so, whether that condition did not depend upon the circumstance of the food not being varied in quality and character,—a frequent cause of constipation in children and adults, which is readily set right by directing the patient to vary daily the animal and vegetable food.

#### TREATMENT.

I directed that the bowels should have a chance to take care of themselves, and the appetite indulged with any kind of food that the patient fancied, and the body to be rubbed with spirits of ammonia and camphor mixture every night, to promote activity of circulation on the surface, aided by friction with the flesh-brush every

morning, to use an injection once a day, containing two grains of nitrate of silver to an ounce of distilled water, to overcome the leucorrhœa, and to take a grain of sulphate zinc three times a day.

This plan was continued for four weeks with most satisfactory result, after which a cold shower-bath was used instead of the liniment. Thus the patient, without a single dose of aperient medicine, recovered the regular function of the bowels and uterus, and lost her headache giddiness, and recovered her appetite and wonted vigour of mind and body.

#### OBSERVATIONS.

The feeble, or asthenic division of the serous temperament, may be too much stimulated by external as well as by internal means ; yet stimulants are most efficacious generally in the serous or relaxed temperament, requiring, however, to be occasionally combined with a mild mercurial preparation and mild aperient medicines, such as rhubarb.

In the serous temperament, an elasticity, in some degree, exists, capable of reaction ; but, in the feeble or asthenic form, it only exists in a much lower degree ; therefore astringent tonics are indicated without stimulants, whilst in the former they are found to answer best combined.

When the serous temperament is combined with that of the bilious, mild mercurial preparations are bene-



ficially administered, followed by purgatives and stimulants.

In illustration of my views and treatment of irritation, the following remarks and cases are extracted from the fourth edition of the *First Principles of Medicine*, by *Doctor Billing* :

“ I think from the statements already made, it may be deduced that the diseases of morbid sensibility (*i.e.* irritation), were it proved that they depend upon inflammation, are not curable by common depletion ; the medullary tissue is too fine to be affected by the force of the circulation, or relieved by taking off the *vis a tergo* by bleeding, digitalis, &c. Hence neuralgia, tetanus hydrophobia, chorea, hysteria, &c., must be reached through the circulating fluid, by what have been called tonics, iron, bark, arsenic, &c., combined with narcotics, and with stimulants, according to circumstances.”

He observes, very judiciously :

“ Has any one ever succeeded in purging a tetanic patient (locked jaw) by the most drastic medicines, until the nervous system was relieved ?”

The Doctor notices “ a remarkable case on record, wherein the patient recovered of tetanus, after the nurse, by mistake, had given during the night, instead of the medicine, a liniment, containing a large proportion of laudanum. Many cases of tetanus have recovered under the employment of warm baths, stimulants, and narcotics, from which, and various analogies, I adopt the treatment by opium in tetanus. If any addition be made it should be that of tonics and stimulants when required, not sedatives.”

He says : “ Since the above was first published, I have had two cases of the disease. The one locked jaw (trismus), in a debilitated habit, recovered with an opiate every night and a tonic medicine (*inf. gent. co. vin. ferri.*), with nourishing liquid food and fermented liquor.

“ The other, aged seven, traumatic tetanus (locked jaw, with opisthotonos in frequent paroxysms), recovered also.

“ The treatment, in the latter case was (the third day of the disease) an opiate immediately, to be repeated every night, and a narrow blister along the spine.

“ Fourth day the report was—felt better, and bowels acted ; but blister appearing to irritate, ordered an enema with *Lig. Opii. gt. xx. ol. terebinth, gt. xxx.*, every third hour. The second dose produced calm.

“ Fifth day better, and jaws relaxing.

“ Sixth, no opisthotonos since opiate last night ; muscles of the neck and abdomen still rigid, bowels confined. A purgative was given by a medical friend, which acted towards evening, producing griping and return of opisthotonos. I consequently ordered an opiate enema, with *gt. xxx.* A second in four hours produced calm and sleep.

“ Seventh day, no return of spasms, from which time the patient gradually recovered. The amelioration as evidently depended upon the opiate, as the relapse upon the sedative” (purgative).

Every practitioner must have observed the great similarity of condition of the bowels and secering organs in tetanus, convulsions from teething, colic, from lead

or other causes, hysteria, gout, delirium, coma, chorea and other conditions, when the nervous system is in a state of irritation.

The principles of treatment pursued in the above case by Dr. Billing, in assuaging nervous irritation by opiates, and counter-irritants to the spine, I have adopted more than twenty years with the utmost satisfaction.

Nervous cases simulate very much in their immediate cause and effect. Debility favours irritability, and the latter may terminate in some nervous affection; hence it is a common mistake committed by gouty patients, for instance, to live very low during an attack, and to take aperient medicines, &c. There can be no doubt that both plans prove injurious, inasmuch as the sudden transition from good living to the contrary, or at least restricted diet, not only gives an injurious shock to an over susceptible constitution, but increases its debility, and thereby necessarily its irritability, that may either affect generally the nervous system, or be concentrated to a point. Soothing remedies, counter-irritants, and a generous diet is incomparably the best plan of treating nervous affections,

How very frequently I have known patients to say to me, "When I could eat and drink I was not allowed to do so; but now that I have no inclination to take them, they are pressed disgustingly to my feelings; and were I to consent to take them, I feel assured that I could not digest them, consequently would only do me harm."

I firmly believe that a person in health may eat



whatever he likes, moderately, and, when ill, what he can. How often have I known patients to be bled, blistered, purged, and starved for a pain in the head, side, joint, spine, or in some organ, without benefit, and quickly relieved by wine and food, with or without ten or fifteen drops of tincture of opium and digitalis every six hours, even when the medical attendant had been regretting he could not carry further the plan of depletion, to overcome the supposed undue arterial action, which only apparently accompanies nervous excitement, and is produced by depletion without inflammatory action.

Mr. Travers long ago remarked, that a loss of balance in the sanguiferous system, occasions an undue determination of blood to the head, and that the latter often exists distinct from general plethora, and is aggravated by loss of blood.\*

Cases of undue determination of blood to the brain and to organs, are especially common after deep-seated chronic inflammation, or distress from over excitement, by which vessels have lost their tone,—an effect decidedly increased by depletion.†

#### CASE.

Mr. Travers details an example of a patient, who had a determination of blood to the head, as consequence of excessive bleeding for an attack of amaurosis :

\* Second Edition, p. 161

† First Edition, p. 158.

A gentleman, ætat. 25, of short stature and constitutionally healthy, came from the country one morning in extreme anxiety, earnestly requesting Mr. T—— to apply a ligature to his carotid artery. His pupils were large, and his countenance suffused, and bore the appearance of preternatural determination of blood to the head, he had been the subject of two attacks of inflammation, one in April, the other in October of the same year, during which he had lost upwards of one hundred ounces of blood.

He had now a constant heavy pain in the head, chiefly over the coronal sutures, and in the direction of the sinuses, with tinnitus of the left ear. After stooping the giddiness was extreme, and a golden-coloured spot, edged with black, appeared floating before the eye. He had been troubled with muscœ in excess for a year and a half past. He had now fire-sparks flashing before the sight, and saw a pulse in the choroid, synchronous with that of the wrist. He was not troubled by muscœ when he regarded near objects, but they became numerous in proportion as the object was remote.

Dimness of vision was not much complained of. He recovered gradually but perfectly, under a regulated diet and a course of the blue pill, with saline aperients.

This case exemplifies well the type of hypercœmia from distention of vessels, especially when the constitutional powers have been severely depressed by treatment and regimen, an injudicious treatment of further bleeding would most probably have destroyed the patient, by either exhaustion or by undue reaction and deranged circulation through the cerebral vessels.

Dr. Abercrombie has frequently seen this in individuals who have been actively treated for threatened apoplexy, the attack itself being warded off, and the patient continuing without any uneasy feeling, as long as he remains quietly at home ; but, on being excited to muscular or mental action, all the bad symptoms return.

Severe injuries to the head are also liable to be followed by a passive hyperœmia of this nature, quite independent of the existence of actual disease going on in the brain ; and in this way patients may suffer from imperfection of vision, vertigo, and head-ache, especially on excitement, long after the other symptoms of the injury have ceased ; these symptoms themselves yielding to treatment at a longer or shorter period subsequently, or remaining permanent.

The best plan of treatment consists in keeping the mind and body quiet, the secretions normal, the head cool, and feet warm. Diet should be moderately stimulating and simple ; the surface of the body to be well rubbed once or twice a day, and to administer tonics and mild doses of mercury will be found advantageous, as well as counter-irritants, to the skin, and taking care that the cells of the colon be occasionally cleared of scybelæ.

The importance of removing scybelæ is well exemplified in a case related by Mr. Tyrrell, in the second volume of his work on the eye, (page 280).

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## CASE.

A lad, aged 13, who had been suffering for many days with head-ache, giddiness, flushed countenance, intolerance of light, imperfect vision, and loaded tongue, red at the edges.

On examination, an irregular indurated swelling was found in the right iliac region.

## TREATMENT.

A full dose of scammony and calomel produced a very copious discharge of hard scybelæ, with immediate relief; all the urgent symptoms subsided, and, after a second dose, he became completely convalescent.

Derangements in the functions of the primæ viæ, liver, uterus, &c., produce, among other diseases, amaurosis, as scybelæ did in the case of the boy, together with sympathetic head affection, without any pathological mode of action, except by recognizing the habits of morbid nervous action.

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The following case of spinal irritation, related by Mr. Watson, in the *London Medical Gazette*, is interesting, and somewhat similar to some I have met with in practice. A few cases I shall transfer from my case-book.

## CASE.

“ E. S., aged 31, a nursemaid, of a full habit, consulted me in August, 1838.

“ She complained of having been irregular for eight weeks, and of an aching pain continually in the arm and shoulder of the left side.

“ The pain extended down the arm to the elbow, and radiating from the acromial region along the superior border of the scapula, up along the muscles of the neck towards the ear, through the mamma of that side, and along the sternum and clavicle. The shoulder itself was somewhat swollen and painful to the touch. She had a similar affection about twelve months ago, but slighter and less obstinate. She has latterly suffered much from head-ache ; bowels are torpid ; no leucorrhœa, or other ailment, but looks in good health, and is chiefly employed in nursing an infant, which she carries almost always with the affected arm.”

## TREATMENT.

He ordered, at various periods, sedative anodyne, and astringent lotions, warm poppy fomentation, and purgative medicine, leeches and blisters to the shoulder, and alterative doses of blue pill, and afterwards quinine and carbonate of iron, with no marked good effect, nor yet from the administration of turpentine and castor oils.

Having again and again examined the shoulder-joint and the course of the pain, without detecting any lesion to account for the obstinacy and continuance of the pain, and having treated the pain as inflammatory, rheumatic, and nervous, without advantage, by general and local remedies, together with accupuncturation over the deltoid muscle.

She casually observed to him that she had experienced during this and former attacks, a slight tenderness in the spine, between the shoulders, but only where the edges of the stays, meeting behind, were pressed against the spine by the back of the chair whilst sitting, which was entirely relieved by a slight change of posture, and thought no more of it.

Mr. Watson accordingly manipulated each cervical spine, without giving her the least pain, until he came to the third and fourth dorsal vertebræ, which were found tender on steady pressure. She distinctly asserted that she never felt any of it in common, nor at any time, except in the transient way described.

As she felt no pain above or below the third and fourth dorsal vertebræ, he felt assured of the seat of the cause of pain.

He ordered a blister over the affected part to be kept open, also a resinous purgative, which he found required to be very strong to act upon her sluggish bowels, and temporary rest; thus the patient was speedily restored to perfect health, from pain, either in the head or shoulder, with her catamenia properly restored in quantity and quality.



## CASE.

Mrs. R., aged 34, mother of four healthy children, whom she suckled, became suddenly indisposed, three weeks after weaning her infant, with lassitude, headache, loss of appetite, and depression of spirits.

## TREATMENT.

Her medical attendant was sent for, who bled and purged her, and, in the course of a few days afterwards, applied leeches to the temples, and a blister to the nape of the neck. This plan was continued for some time, with a blue pill at bed time, and aperient febrifuge during the day.

This treatment was continued to three or four weeks, when she began to feel a heated sensation of the lower extremities, and subsequently she gradually lost the use of them; and just in proportion as this failing advanced, excruciating pains in the legs came on, and continued unabated by anodynes, &c.

Six weeks from the commencement of her indisposition, I was requested to meet her medical attendant. When I proposed to examine the spine, he said it was not at all necessary, since the patient had never complained of the back, &c. However, on examining the spine, the second and third dorsal vertebræ were found tender. Local depletion and rest were resorted to, and infusion of senna and hydriodate of potass mixture was

ordered, which soon relieved her of her pains, dry skin, heartburn, together with the recovery of her extremities ; in short, her former vigour of body and mind.

The following case is similar to many others I have met with in my practice during the last four-and-twenty years, cured by the same means :—

### CASE.

Miss A——, aged 18, residing in Harlyford-place, Kennington, consulted me, respecting a considerable swelling in her feet and ankles. She was obliged to use her father's worsted slippers, no others being sufficiently capacious to admit her feet.

The swelling was elastic, and accompanied by a headache, of a dull, heavy character, as she described it, on the top of her head : also a dry cough, with palpitation of the heart and pain in the loins, and leucorrhœa.

Her parents were greatly alarmed at the state of her health.

### TREATMENT.

It is unnecessary to enter into detail of the treatment ; suffice to say, that three ounce draughts, containing equal proportions of castor oil and turpentine, taken at intervals of four or five days, removed the source of all her symptoms, scybalæ, in large quantities. After which I directed her to take twenty drops of muriated tincture

of iron two or three times a day, and to have recourse to friction daily, for ten to fifteen minutes, to the spine.

Thus she was restored to health for about two years, when her former symptoms, in a slight degree, returned upon her, which were quickly dispersed by a repetition of the former remedial means, and she has continued for several years in good health.

#### CASE.

Lieutenant-General B—— consulted me in April, 1839.

The General has resided for many years in a warm climate, and always lived freely, and, formerly, rather gay. To these circumstances he attributed his present dilapidated state of health.

First, he had a troublesome cough and oppressive breathing, swollen feet and ankles, with a painful irritable ulcer on the inside of the leg, above the ankle, together with an irritable bladder, with small irritable ulcers within the prepuce, and on the tongue, gums, fauces, and frequently breaking out on the face and scalp.

These latter symptoms were attributed to former gay habits, and accordingly treated, by blue pill, sarsaparilla, &c., by several eminent medical men in town, whom he had consulted at different times, and likewise by various practitioners at different popular spas, where he had been recommended to try their waters. All he tried had failed permanently to relieve him.



I found him physically and morally greatly depressed and he assured me he was breaking up fast, and expected no more relief from me than from the rest of the medical men whom he had consulted, and that he had only sent for me to oblige an old friend who had several times wished him to consult me.

#### TREATMENT.

I commenced by giving him a turpentine and castor oil draught twice a week, which had the desired effect of removing a large quantity of scybela, which doubtless was in this case as I often found in others, the cause of the ulcerated and swollen legs, irritable bladder, and oppressed breathing. However, be this as it may, the patient was also directed to take five drops of the solution of arsenic three times a day, and to have the spine and abdomen well rubbed every morning, and to use the tincture of iodine to the ulcers.

Thus he was perfectly restored to health by September, when he left town for the country to partake of field sports, and which he continues occasionally ever since to enjoy.

I have several similar successful cases recorded in my case-book ; but I cannot forego the satisfaction of selecting the following, as an instance of the good effects of administering arsenic in certain cachectic cases, accompanied by cutaneous affections.

## CASE.

Mr. D. for the last two years has been much troubled with very painful ulcers, on the fauces, tongue, and gums, causing great pain to masticate and swallow his food. He also had herpetic eruption on his face and head, and occasionally on the prepuce and scrotum, with enlargement of the inguinal and sublingual glands.

During the summer he tried the sea coast, and at various times during his illness he has taken, by the advice of some medical friend, various preparations of mercury, sarsaparilla, alkalines, and acids, and used to the ulcers, nitrate of silver, sulphate of copper, and various astringents, and put himself upon either high or low diet, without, however, deriving any permanent benefit.

## TREATMENT.

I first recommended solution of iodite of iron, which, like many other things tried before, produced only a temporary benefit.

Secondly, I ordered five drops of the solution of arsenic three times a day, which cured the ulceration in the mouth and the eruption on the skin, and perfectly restored the normal condition of his glands, and general state of his constitution.

I will here also take the opportunity to observe, that

chilblains, either before or after the skin is ulcerated on the hands or feet, may be readily cured by the administration of small doses of the solution of arsenic, after other remedies had long been tried in vain.

I have frequently seen cases like that of the General and Miss A—— treated by general and local bleedings, blisters, &c., low diet, and every purgative, except turpentine, the only medicine that I am acquainted with, capable of exciting sufficient action on the colon to discharge its contents of scybalæ, not only to have their illness greatly protracted, but to be brought to imminent danger.

I have also occasionally found ulcers of the legs and varicose veins in elderly persons, particularly in women, to have depended upon torpid action of the large intestines forming scybalæ, and cured by their removal and prevention of formation.

Both of these latter views are most essentially aided by rubbing and kneading the abdomen, and by friction along the whole of the spine once or twice a day, and by daily dashing a tea-cupful of cold water against the abdomen; also by using the tincture of aloes as a liniment, or aloes as a plaster, either to the loins or over the umbilical region.

These affections are generally accompanied by tenderness in some part of the spine, which is implicated as a cause or effect.

Dr. Hall's discovery of the reflex action, or function of the nerves, will no doubt enable us to explain many phenomena heretofore deemed inexplicable; for instance, an effect may be produced very remotely from



the original source of irritation, by the power a nerve has of transmitting an impression made upon the extremities of one of its branches to the extremities of another branch, whereby an effect is produced on the part to which such impression is conveyed, similar to that which would have followed, had the impression been made directly upon the extremities of the branch thus secondarily affected.

Hence we can understand why the chief pain in disease of the hip-joint is generally referred to the knee; and, in certain diseases of the uterus, why pain is directed to the back, hips, and lower extremities.

The distribution of the branches of the pneumogastric nerve will explain why coughs should result from the presence of crude, indigestible substances in the stomach, or a fit of spasmodic or dyspeptic asthma, or palpitation of the heart, should immediately occur.

Most medical practitioners have had opportunities to observe the very quick effect of opium, or some other medicine, in cases of asthma, which necessarily must have been produced through the medium of the nervous system, the gastric branches of the eight pair of nerves. Thus irritation of a substance in the stomach may produce morbid effects in the tissues to which the pulmonary branches are distributed, and, through the same medium, the effect may be dispersed by appropriate remedy.

The same principles will explain the mode by which morbid actions are instituted in other organs, or in the stomach itself. Hence the source of irritation may be either at the origin of nerves in the branch or spinal

marrow, or applied at their respective extremities. Thus liver complaints are remedied by local applications on the skin over the affected organ, between which not the slightest direct communication exists by blood-vessels, or even by nerves ; the latter on the skin only communicate with those of the liver, by having a common origin in the spine. Hence the benign influence of topical remedies over the region of the liver. The same principle will explain the beneficial influence of blisters behind the ears in certain affections of the eye.

It is said by Mr. Jeaffreson, a very practical oculist, who treated with the utmost success above fifty-three thousand ophthalmic cases, whilst he was surgeon to the Eye Infirmary at Bombay, that the native doctors drop into the ear their remedies for diseased eye, with so much success, that he adopted and commends the practice.

Doubtless the remedy is appropriate ; but the manner in which it affects so much good, must be in consequence of the intimate nervous connexion between the eye and the ear, through the ramifications of the fifth and other nerves, and hence the sympathy that we now and then see between these organs when one is affected, and deafness being remedied by external applications.

Cough is very frequently excited and continued by hardened wax in the ear. When this cause is overlooked for some time, as I have known it often to occur, the membranes of the larynx and trachea become irritable or inflamed, keeping up the cough of a drier character than that which accompanies chronic enlarge-

ments of the tonsils and uvala; whereby it is accompanied from the continued mechanical cause by a copious mucous secretion.

Now, the cough that is excited by wax in the ear, is like that produced by hysteria, of a dry, harsh character; and I scarcely need observe, that a cough is invariably an effect produced by various causes, independent of the above-mentioned causes and affections of the lungs, or bronchial tubes; for instance, in sympathy with dyspepsia, spinal and liver affections, &c.

A cough excited and continued in sympathy with a diseased organ, near or remote from the immediate seat of cough, can only be cured by appropriate treatment of the affected exciting organ, or by removing a mechanical cause, as wax in the ears, or matter, like cheese in substance, occasionally deposited in the tonsils of scrofulous subjects by chronic inflammation; or, should they be enlarged by simple inflammation, it must be subdued by the usual means, and by puncturing them with a lancet.

Another occasional cause is that of a relaxed and elongated uvula, which may be cured generally by astringents, or by lunar caustic, &c. Should, however, inflammation in these glands prove too obstinate to be subdued, the glands had better be removed, which is easily effected with no danger, and but very little pain.

I was lately fortunate in curing a lady of nausea and occasional sickness, that had troubled her for a long time, and baffled the skill of some of the pre-eminent medical practitioners of the day, by merely snipping off the uvula with a pair of scissors.



I have also cured a young lady of deafness, and supposed alarming symptoms of consumption, by merely syringing her ears, until hardened pieces of wax were turned out; after which she immediately recovered.

It is extraordinary how seldom remote organs are considered and examined by medical practitioners, in order to comprehend the affection with which the patient is afflicted, and seeks relief for.

Although this young lady was deaf, the ear had not been examined by any medical man she had consulted about her cough, notwithstanding it is generally known that irritating the internal part of the ear will excite cough, and that the latter may be the consequence of chronic inflammation, or extraneous matter in the ear.

I believe that many severe and obstinate cases of cough, supposed too often to depend upon consumption, may be engendered and continued only in sympathy with certain remote organs functionally or organically affected, and may readily be cured by appropriate remedies, to the source which may generally be comprehended by examining various organs known to have anatomical connexion, and to sympathise with those organs immediately affected in coughing, instead of regarding the latter as a local effect of diseased lungs, &c., as the above cases, and many others I could relate, prove to be true.

I fear that many people who are affected thus might be cured at home, although occasionally sent abroad to a warm climate, who by change of air or a better plan of medical treatment, or by some other fortuitous circumstance, are returned home cured, to praise, unmerited,

some warm climate, as Madeira, Malta, Italy, Spain, France, &c., and thereby mislead into false hopes the really consumptive patients, and induce them, at great sacrifice of feeling, personal, and often pecuniary inconvenience, to expatriate themselves, and to die amongst strangers.

“Dead men tell no tales;” but at Madeira, and in other warm climates, the innumerable silent graves of the English, and inhabitants of other northern countries, mark the uniform fallacious influence of the climate; and the deep has swallowed thousands on their way to the promised land.

I do not believe that a warm climate ever did or can cure a true case of consumption, *i. e.*, tubercles of the lungs in a state of suppuration. Warm climate may possibly protract the suppurating process of the tubercles, and thereby the life of the patient for a given time; and so much may be done in their own native land, by appropriate means.

There appears much contradiction in the management of consumptive patients in this and other countries. The inland inhabitants send their consumptive friends to the sea coast; and the inhabitants of the latter places, amongst whom consumptive patients are numerically greater, send them inland; and the Americans do the same.

Medical men in the Indies, and on the islands and shores of the Mediterranean, Malta, &c., send their consumptive invalids northerly, to avoid the summer heats. Consumption is just as common in India, and even in places where we send our consumptive invalids,

as it is in our own country ; and consequently we find that the natives of other countries, and their medical men, have no confidence in their climates, and recommend, as we do, partly from custom and partly from ignorance of a better plan, change of air. Consequently, from want of real value in this system of treating consumption, one place gains notoriety and fame, whilst another proportionably loses both. So Madeira is fast losing its former fame, whilst other places are absorbing it, as it were, although equally spurious in all.

Whatever good a consumptive patient can derive, must, I am fully satisfied, be obtained by constitutional and local means, that can be effected and administered to the afflicted at home, with his anxious and affectionate parents, and amidst his fond relatives and friends, guided by our advanced knowledge in anatomy and physiology of the nervous system ; and thereby more accurately observing and associating the laws of sympathy than has been in our power to do heretofore. We, however, have long since known that morbid affections of the lungs, heart, stomach, liver, kidneys, uterus, bladder, &c., are relieved or cured by the application to the spine and sacrum of scarificators, setons, leeches, blisters, anodyne, and stimulating liniments, and by such external remedies to other parts of the frame.

The new discovery of the reflex action of the nerves, will doubtless enable us, for the future, to apply our remedies, with greater accuracy, to the various sources of the functional and organic diseases of different organs, and consequently with more uniform success.



It will also remove, or, at least, tend to lessen, the numerous daily occurrences of extreme diversity of opinions prevalent amongst our highest authorities, not merely in reference to purely speculative questions, but in relation even to practical matters of the highest import.

Unfortunately some practitioners consider that the science of medicine is but a conjectural art ; and I fear there are but too many who are not unbiassed by prejudice, and unfettered by preconceived opinions or slavish subservience to some favourite authority, or deny that their practice is not materially influenced by them ; and consequently cannot justly refuse their assent to be classed amongst such practitioners, to lead in their wake the public opinion, by a slight tenure of their confidence.

The various symptoms connected with the spine are certainly very extraordinary, and had it not been for the discoveries of physiologists, their nature could not be understood ; and, as it is, some of them are involved in great obscurity ; for example, how can we, for certain, explain why, in one case, the arms should be paralysed, in another only the bladder and rectum, and one leg partially ; and, in a third, that the parts above the place where the blow was received should suffer, as well as those below ?

Such phenomena cannot be satisfactorily accounted for, even in the present state of our knowledge of the anatomy of the medulla spinalis ; and the only attempt we can offer of elucidation is, that the origins of those

nerves, or that particular part of the substance of the medulla with which they are connected supplying the parts affected, have more particularly suffered.

The following paper by Dr. M. Hall, will, however, greatly assist us in studying these cases with advantage. It was read in 1840, at a meeting of the Medico-chirurgical Society, and is reported in the *Lancet*, wherein the talented author observes, that the nervous system must be regarded as the cerebral, the spinal, and ganglionic, and that in considering each disease of the system, we must trace its influence distinctly in those three subdivisions of that system, for the due comprehension of their pathology, and not, as hitherto, subdivided into the cerebro-spinal and ganglionic system.

He observes that we must inquire, first, what are the diseases of the cerebral, of the true spinal, and of the ganglionic subdivisions of the nervous system; and, secondly, what is the influence of one of these on the other two, and in what order is that influence manifested? The answers to these questions give the diagnosis and the prognosis.

In hemiplegia, the danger is in proportion to the degree in which the true spinal system is moved with the cerebral. Is there stertor, is there dysphagia, are the spineters affected? There is great danger. If these symptoms continue in spite of active remedies, the case is fatal. What is the rationale? The true spinal system has been affected by the cerebral disease by counter-pressure.

If this be from congestion merely, blood-letting relieves it, and the symptoms cease. If the symptoms do

not cease, the fear is excited that effusion and congestion is the irremediable cause.

In a case of apoplexy following a violent fit of epilepsy, the eye-lids did not close when the eye-lashes or the conjunctiva were touched, nor did dashing cold water on the face induce sobbing. Forty ounces of blood were taken from the arm, and these functions of the true spinal system were at once restored.

In a case of hydrocephaloid diseases, the eye-lids gaped and remained motionless when approached and touched with the finger. On giving cordials, the true spinal system recovered its functions, and the little patient was forthwith restored.

The first degree of apoplexy exists as a purely cerebral affection. The second involves the true spinal marrow, and the third the ganglionic system. Coma, stertor, dysphagia, bronchial rattle, &c., respectively denote the several degrees of this malady. Tetanus, on the other hand, is, at the first, a purely spinal affection. The cerebral functions are unaffected during its course; the cerebral and the ganglionic subdivisions of the nervous system become involved.

Epilepsy seems to occupy the limits of the cerebral and true spinal system. The first symptoms are, in a multitude of cases, if not in all, affections of the true spinal. The effects of these are seen in the cerebral subdivision of the system.

In this able paper, the author discusses the effect of counter-pressure in cerebral diseases on the true spinal marrow, and the peculiar effects of exposure to cold, in first producing paralysis, and then spasmodic affection.



These points were illustrated by a series of facts and observations.

The author concludes by prescribing a list of the points to be noticed, in investigating the diseases of the nervous system, in the form of a table :—

1. The cerebral symptoms.
2. The true spinal symptoms.
3. The ganglionic symptoms distinctly.
4. The degree of complication of these.
5. The supervention of one or two of these, on the third previously existing.
6. The condition of the muscular irritability.
7. The condition of the reflex and retrograde actions.
8. The action of the vis nervosa.
9. The effects of emotions.
10. The power of volition.
11. The probable influence of counter-pressure.
12. The condition of paralysis and of spasm, and the changes in these.

The Doctor makes the following practically useful remarks :—

“Cerebro-spinal affections are more common in the advanced, than in the more youthful period of life, and that the difference between hysteria and epilepsy exists in the fact that the larynx is never closed in hysteria, but is so in epilepsy.”

Whether the above ingenious table will lead into a more successful plan of treating medical and surgical cases, such, for instance, wherein the lower extremities are swollen or ulcerated, as in the described case of the General, or that of Miss A——, than I have pointed

out, I know not ; but it is to be hoped it may lead into more correct pathological views of the nature of these cases we so frequently meet with in practice, wherein the swelling is elastic or inelastic, dropsical or not.

At present some practitioners regard the swelling as local effect of inflammation of the tissues, whilst others consider them to be a species of dropsy. In some instances, Dr. Prout has pointed out the cause to depend upon functional or organic disorders of the stomach and kidneys ; whilst others have attributed the cause to exist in the serous tissues.

The patients often have the usual symptoms attending acute and chronic dropsy, such as head-ache, cough, oppressive breathing, pain in the infero-posterior part of the left or right hypochondrium, urine spare in quantity, and varied in quality, skin hot, countenance, particularly about the eye-lids, slightly œdematous, together with the hands, more particularly observable in the morning. The bowels are generally constipated. The patients are most commonly of the leucophlegmatic temperament, having generally a tenderness in some part of the spinal column.

I fear it must be acknowledged that the true pathology of this and other form of dropsy is still but imperfectly understood.

Dr. Abercrombie has published in the *Edinburgh Medical and Surgical Journal*, cases of acute dropsy succeeding exposure and vicissitudes of cold weather. He attributes sudden dropsical effusion in persons in vigour of life, to inflammatory affection of the lungs, impeding the circulation through those organs, and

recommends bleeding as the only safe remedy. I cannot assent to this theory, because the patient can breathe, though oppressively, without pain; and dropsy is not an usual attendant upon inflammation of the lungs.

The Doctor, it is true, alludes to other forms of dropsy coming on rapidly, and unconnected with any visceral disease, and which do not yield to the ordinary diuretic treatment.

I have had opportunities of examining after death dropsical or anasarcaous cases, supposed to have been produced by cold, and treated as recommended by the Doctor, without being able to satisfy myself that any pulmonary affection existed, and in other cases, sufficient to account for the tropical effusion.

I have observed that many of the facts connected with the dropsy that follow scarlatina, to be closely allied to those occasioned by a cold. The albuminous urine, even with low specific gravity, is not sufficient to warrant us in assuming that either local inflammatory action or organic disease of the kidneys exists. It is a symptom, I believe, but very remotely connected with the kidneys, but often directly connected with such a condition of those spinal nerves that supply them with functional power, as calling for the application of electricity as an important auxiliary, if not an essential part of the treatment. There is not, it appears to me, any good evidence that in most cases of anasarca, there is any thing more than functional disorder of the kidney existing, and that, not as a primary affection, but only in sympathy with some derangement of the skin, or of its con-



tinuation along the alimentary canal in its functional capacity as a mucous membrane, or of the heart, liver, uterus, or organic affection of the brain.

In respect to whatever changes that may occur in the blood to favour effusion and ulterior consequences, may, I conceive, rationally be attributed to a derangement in the normal current of nervous energy at some point of the circle formed by the cerebral and spinal nerves.

Dr. Theoph. Thomson related the following case to the Medical Society of London, which is reported in the *Lancet*, in the number for February 2, 1839. It is not as singular or so interesting as many cases I could extract from my note-book ; but I give it insertion because disease of the spine was not present, as some practitioners conceive is necessarily an attendant upon irritation of its nerves, and that it, like many other cases superintended by respectable practitioners, show that I do not hold singular opinions, though confessedly rare in the aggregate of medical men. I heartily trust that the practice of examining the spine manually, or to trace mentally the connexion of the spinal nerves with the most prominent symptoms of every medical case, will become daily more general, ere therapeutical measures are decided upon, which I firmly believe will be most advantageous to patients, and redound to the distinguishing merit of the medical profession ; for I believe that the spinal cord is generally, if not always, the source of hysteria and neuralgia, for both are essentially the same, and the symptoms are directed and governed by it, and are cured upon the same therapeutical principles.

Dr. Hall attributes epilepsy, convulsion, and spasmodic affections to the spine, and says, “ that no affection of the brain could *immediately* induce spasm of any kind, either by irritation or laceration of the brain in any manner ; but by touching the spinal marrow, or its incident and reflex nerves, and then you have instantly spasm.”

#### THE CASE.

A delicate, pale girl, 18 years of age, who for the space of three years had suffered from the distressing symptoms of regularly vomiting up her breakfast and dinner soon after taking them. With the exception of this her health was good, and there was no evidence of any kind of organic disease going on, the only apparent symptom being a little more redness of the lips than ordinary.

The matter vomited had occasionally an acid taste. The catamenia had not appeared.

During the three years, she had been under the care of a number of skilful and respectable practitioners, who had employed a variety of remedies without any benefit.

It occurred to Dr. Thompson to examine the spinal column, and, on doing so, he was struck with observing a great puffiness over the portion of it corresponding to the seventh, eighth, and ninth dorsal vertebræ, the sides of which were also very tender.

## TREATMENT.

Leeches, followed by small blisters to each side of the affected vertebræ, were applied, and a mucilaginous mixture, with one drop for a dose, of the hydrocyanic acid, and small quantities of carbonate of soda were given.

The day following the application of the leeches, and the three following days, there was no vomiting.

On the fourth day vomiting took place, from some irregularity in the diet, and again occurred from a similar indiscretion. With these exceptions, however, the regimen being more carefully attended to, vomiting did not again occur. The tenderness over the spinal column was removed in a week, and the puffiness had disappeared at the expiration of a month. The catamenia appeared after four or five months. There was no spinal curvature.

This was one among a number of similar cases which he had witnessed. He thought it a point of great importance, in all obscure cases to examine the condition of the spinal column.

In support of the use of friction of the spinal column, I beg to extract the following remarks from the *Medical Gazette*, dated 11th of March, 1842, made by Mr. Sawyer, of Myddleton-square, respecting the case of his child, "between six and seven years of age, who was suffering from mucous irritation of his bronchii, bowels, &c. with sympathetic cough, and great consequent debility, with a slight curvature of the middle dorsal vertebræ, as sequelæ to a smart attack of ocar-



latina. I rubbed the spinal column and muscles of the back every night, from a quarter to half an hour; and the abdomen, chest, and arm-pits, for a shorter period, with an ointment composed of *hydrarg. c. creta gr. x.* — *adipis pptæ. ℥ij.*; and, in the morning, with *sulph. quin. gr. x., adipis pptæ ℥ij.*

In a week he lost his cough; his appetite, which had been much impaired, returned, and by continuing the alterative until the secretions were healthy, and the quinine ointment for about six weeks, he was restored to perfect health, and the curvature had quite disappeared.

Mr. S. observes, that having seen the various uses of friction as a general remedy in weakness and other affections of the spinal column, and as an auxiliary in rheumatism, and other muscular and spasmodic affections, as hooping-cough, &c., he recommends that this very useful and much neglected therapeutic agent, friction, may be more used by his medical brethren when it will be surely better appreciated than it is at present, particularly that of a medium for administering medicine by the absorbents of the skin on its smooth surface, especially in cases of delicate, obstinate, or over-indulged children, where the difficulty of administering medicine with satisfaction is very great, or in cases where there is much irritability of the stomach or of the nervous system, so as to reject all internal remedies.

From ample experience I can heartily join Dr. Thompson and Mr. S. in commending friction as an invaluable remedy to invigorate all cases of general debility of the system, whether arising from dyspepsia or not. In no case is it of greater importance to examine the spine

than in cases of indigestion, and in affections of the kidneys, for I am convinced that acid secretion both by the stomach and kidneys is most generally primarily excited at the source of the respective nerves of those organs arising from the spine, and perfected in their abnormal influence in the ganglions. Thus the concomitant symptoms of indigestion and urinary concretions are engendered, be the latter alkaline or acid, or mixed in layers, as they generally are.

That the stomach and the urinary organs are frequently secondarily affected, and not as Dr. Prout, in his work on Stomach and Urinary Diseases, attributes to malassimilation as the effect of primary cause engendered in the stomach to derange it and the kidneys functionally or organically, is rendered still more probable if confirmed as a truth, by the fact that indigestion is cured by applications to the spine, as well as affections of the kidneys, &c.

Dr. Prout, however, most ingeniously, and, I believe, correctly, divides the process of digestion ; but I believe the processes are first governed and guided by nervous influence derived from the cerebral and spinal nerves that supply the organs of assimilation ; and again, the kidneys, when abnormally secreting urine, may be advantageously aided, like the stomach, to recover their normal functions by electricity, as well as by administering medicines into the stomach, which are either given to purge, or to give a tone to the system, or to decompose undue secretion of acids or alkalines.

Dr. P. says, in the third edition, at page 75, that excessive acidity of the cœcum is generally accompanied

by a deficient secretion of bile, and sometimes by a complete temporary suppression of the bilious discharge, apparently from spasmodic constriction of the common gall-duct, or, it may be, of the biliary ducts themselves. Certain individuals under these circumstances experience what is called nervous head-ache. This species of head-ache is frequently accompanied by nausea, is confined to the forehead, and, when severe, produces complete intolerance of light and sounds, and a state of mind bordering on delirium.

After a greater or less time the pain ceases, sometimes quite suddenly, and the remarkable circumstances to be mentioned are, that this sudden termination is preceded by a peculiar sensation (sometimes accompanied by an audible clicking noise,) in the region of the gall-ducts ; that immediately afterwards a gurgling sensation is felt in the upper bowels, as if a fluid was passing through them, and that in a few seconds, when this fluid which we suppose to be bile, has reached the cœcum, the head-ache at once vanishes like a dream. I have witnessed many of these cases, and in all I found that calomel and saline purgatives either increased the patient's sufferings, or failed to give relief.



## CHAPTER XIII.

THE natural secretion of the stomach for the purpose of digestion is acid, varying in quality and quantity ; and when it is not duly saturated by the alkaline secretion of the liver—(for the bile contains a large proportion of soda, &c.)—the mucous membrane of the alimentary canal is consequently much irritated by the acid, and gas is most copiously engendered, turbulently distending the bowels, and interrupting their ejecting peristaltic action, whilst the latter is more active than is natural ; hence their usually constipated condition, and occasional violent purgation, attended by dry, hot skin, head-ache, and general feverish excitement, pain in the loins, and various other symptoms, according to age and susceptibility of the patient.

The spinal nerves become irritated from their sentient extremities coming in contact with the acid in the intestines and in the kidneys ; the latter organs, under these circumstances, have their functional action doubly imposed upon them, in consequence of the blood having a much larger quantity of acid than usual, when the aliment is properly digested, that is, when the ingesta is properly neutralised in the duodenum by the bile.

The facts that the kidneys and the stomach secrete acid, and the liver alkaline, suggested to Dr. Prout their similitude to a negative and positive pole of an electrifying machine.

When the liver does not secrete healthy bile, the proper treatment will consist probably in administering mercurial purgatives, electric shocks, &c. But in cases where the gall-ducts are subject to occasional spasm, totally interrupting the passage of the bile, giving sudden rise to some symptom, according to the age and susceptibility of the patient, such for instance as headache, vomiting, asthma, lumbago, hysteria, convulsions in children, &c., I have found that the patients are more certainly relieved by administering opium, with a view to allay the spasm of the common gall-duct. The following mixture I have found generally efficient;—two drachms of liquor of potash and two ounces of castor oil, carefully mixed up with four ounces of peppermint water and two drachms of tincture of opium; dose, a table-spoonful or two every two or three hours. This mixture will not only allay spasm, but aid the bile to neutralise the acid ingesta, and carry off the contents of the bowels.

The usual remedies administered to neutralise undue secretion of acid in the stomach, commonly termed heart-burn, are either calcined magnesia, or carbonate of soda. The acid is commonly sulphuric, consequently either of the following aperient salts are formed,—sulphate of soda or sulphate of magnesia: these, however, can only act as palliatives, they can do but little to correct the secretion of the liver, or to overcome the spasm of the gall-duct; the latter may be relieved generally by hot fomentations over the region of the liver, and still more effectually by a hot bath, and the undue secreted acid in the stomach and in the system, by mixing alkali in the water, or

by electricity, or nauseating doses of tartar emetic. In cases of children attacked by convulsions from pain and irritation arising from undue acid in the intestines, either from stoppage of bile in the gall-bladder, or from its non-secretion, I have often found hyoscyamus as efficient as opium to allay the consequent irritation, and frequently after the patient has been taken out of a bath, about one hundred degrees of heat, I have seen much good effected by the application of a dessert spoonful of liniment, composed of equal parts of tincture of opium and spirits of camphor, rubbed for ten or fifteen minutes along the spine and over the chest, and repeated once or twice daily.

The diseases of the kidneys, like those of the heart, are now much better understood than they were twenty years ago, consequently they are detected by medical men; thus the public hear of these complaints much oftener than they did formerly, and, therefore, fancy that these diseases are on the increase, and *liver complaints* on the decrease. The comparative frequency of renal affections, accompanied by a serous condition of the urine, Dr. Bright found on certain occasions, in Guy's Hospital, one in eleven, and, on another, one in six of the patients taken indiscriminately with symptoms of diseased kidney, while in Edinburgh, the proportion seems to be still greater.

With respect to the comparative frequency of renal diseases at different ages, Dr. Bright states, that of seventy-four cases, four only occurred above the age of sixty, thirteen above the age of fifty; fifty under the age of forty-five; and nineteen under the age of thirty.



Dr. Prout and many practitioners, as well as myself, have seen several instances under puberty and in extreme old age. Dr. Prout says, that many of the cases occurring in his practice before puberty, seemed to have resulted from scarlatina, while the cases occurring in extreme old age, have been generally associated with prostrate and bladder diseases. In adolescent and middle age, at least three-fourths—(in Edinburgh, according to Dr. Christian, four-fifths)—of the whole number of cases are caused by the abuse of ardent spirits.

Kidney diseases attack both sexes, but are more frequent in males than in females, in consequence, Dr. Prout conceives, of men being more exposed to exciting causes, as ardent spirits and cold; but the class of society that apply for relief at hospitals, from whom the above table was drawn in manufacturing towns, must be exceedingly modified to be applicable to the higher and middle classes of society, who drink spirits or wine much seldomer, to excite unduly the nervous and vascular system.

Women are less subject to urinary complaints than men, owing in my opinion to another cause than that suggested by Dr. Prout, and that is through the circumstance of the primary irritation of the spinal nerves expending itself in functional or organic affections of the uterus, and of the mucous membrane of the intestines. In all cases it is of the utmost importance to distinguish inflammatory action of the kidneys, in order that prompt active measures may be used at its commencement for its subdual, so that it may not pass into the chronic

form, to produce concretions either in its tissues or in that of the bladder.

The leading changes in the properties of the urine will assist our diagnosis, which during inflammatory attacks of the kidneys, from whatever cause and form, the first observable symptom in the urine is a diminution in its quantity, accompanied, of course, by a corresponding deepening of its colour, and an increase in its specific gravity. Inflammatory dropsy, for instance, usually comes on rather suddenly, and is preceded by chilliness and rigors, which are speedily followed by the well-known train of feverish accompaniments, viz., a full and hard pulse, heat, dryness and soreness of the skin: (the latter symptom I regard decidedly reflex, according to Dr. Hall's theory.)

Again, Dr. Prout says a state of anxious restlessness and oppressive drowsy head-ache. Here the scanty and high-coloured urine above described is very frequently passed in small quantities at a time, and occasionally with more or less of irritation. There is a dull, heavy pain in the loins, increased by pressure, and sometimes extending to the whole of the lower region of the abdomen, particularly to the groins. With these symptoms the stomach sympathizes, and there is almost always nausea, and sometimes vomiting and pressure over the region of the stomach, producing distressing uneasiness or actual pain.

After a few hours, or at most a day or two, the face and extremities begin to swell, and by degrees the œdema extends, more or less, over the whole body.

The urine is now still further diminished in quantity, the drowsiness increases, and at length the patient becomes quite comatose, in which state, if active measures have not been taken in time, he usually expires, sometimes in convulsions. In other instances serous effusion, accompanied by high inflammatory action, takes place in the chest or other cavities. Thus he may survive for a while, but generally quickly sinks.

Dr. P. observes, that, in early life, dyspepsia is generally associated with renal derangements, and that, after forty, affections of the stomach become less frequent, and the organs below the stomach become most commonly deranged, having also less of the periodical or paroxysmal form than is common before the age of forty, such as various fits and nervous affections. The Doctor has observed an excess of urea associated with epilepsy and other nervous affections, consequently the urine should be examined, and the patient treated accordingly.

In diuresis intermittens, and diuresis continua, and in hysteria, urea is often totally absent, whilst in the absence of hysterical affection, urea is passed in great quantity. Hysteric urine is occasionally very offensive, like cabbage-water, or soon becomes so, and opaque, and deposits crystals of the triple phosphates of magnesia and ammonia, especially in warm weather.

I conceive it is not unreasonable to attribute the primary cause of renal affections to the spinal nerves, or at any rate, to examine the column carefully, in order to ascertain whether the affection may not be indirectly, if



not directly, proved to be their cause, by morbidly influencing the stomach, and thereby rendering it unable to effect the proper assimilation of food ; often, according to Dr. Prout, the seat of their primary cause.

The Doctor admits that the exciting cause, for instance of diabetes, is not so clearly ascertained as could be desired. The most frequent causes that fell under his notice, were exposure to cold, attacks of rheumatism and of gout ; the drinking of cold fluids, when heated ; mental anxiety ; or distressing reverse of fortune.

Other authors have assigned their causes to a too free use of diuretic and diluent fluids, as cyder. Also, concussions, or injuries of the back, from hard riding or from falls, and strains. Sir Benjamin Brodie used to mention, in his Lectures on Surgery, when I was formerly his pupil, the various alterations which occur in the character of urine, of persons who had received injuries of the spine, already remarked by me.

Dr. Prout and M. Rayer have noticed that cutaneous affections, particularly the scaly kind, often precede an attack of diabetes ; and Cheselden observed that diabetes accompanies carbuncles, or boils, a fact that has been observed by Dr. Prout. Gout is another cause, together with the effects of a long-continued use of a full diet, and free use of wine, with sedentary habits, and gradual organic diseases, incidental to age, congestion of the liver, prostate gland, hæmorrhoidal veins, &c.

These various opinions show that the primary exciting cause of diabetes is by no means conclusively and satisfactorily determined upon. We therefore must look

further to the nervous systems, to their current of nervous energy, and to causes interrupting the normal supply to particular organs.

It is very extraordinary, that the kidneys and gall-bladder, and mucous membranes of the urinary bladder, intestinal, salivary glands, and other organs, should secrete different chemical matter every two or three days; thus stones in the bladder are often found in layers of acids and alkalines, and Sir Benjamin Brodie has pointed out, that injuries of different parts of the spine, will excite different anormal secretions and symptoms, showing the controlling influence of the spinal nerves, as the following case, extracted from Dr. Prout's work, in some degree proves:—

#### CASE.

J. E., joiner, aged 42, has been a sailor; and, 19 years ago, when on board a ship, got a fall upon his back, which particularly affected the left side, about the region of the loins. This fall confined him three months on crutches; but he afterwards, as he supposed, got completely well, though every spring or summer since that period, he has always suffered more or less, and for a greater or less time, with pain in his loins.

The present attack commenced eighteen months ago, in the usual manner, but with greater severity, and has continued, more or less, ever since. Till within four months, however, he had not been led to observe anything peculiar in his urine; but had only been annoyed

with the usual painful symptoms, and weakness in the back. At this time the quantity of water began to increase very much, and he observed, it deposit, occasionally, a very large sediment of earthy matter. Under these circumstances, he went to a dispensary, where his disease seems to have been considered as diabetes, and treated accordingly, but without advantage.

His symptoms at present are severe enervating pains in the region of the loins, extending round to the groin and lower parts of the abdomen, and occasionally down the thighs and legs, accompanied by retraction and soreness of the testes. Occasionally, also, he suffers excruciating pains in the head, affecting his sight. All these symptoms, however, are much worse on certain days than others, and the worse symptoms are usually accompanied by diarrhœa. Latterly he has become much thinner than usual; his appetite has fallen off; he sweats on the least exertion; and, among other symptoms of debility, has complete anaphrodisia. He is thirsty, his tongue is clean, and rather redder than usual; he is troubled with flatulence; and his bowels are very irregular. The state of his urine is very variable: what he passes in the morning, and perhaps once more in some other part of the day, is at first commonly transparent, and of a light yellow colour, but soon deposits a sort of mucous cloud, which, in a few hours, becomes converted into a perfectly white earthy matter. The specimen of the urine which he brought with him, was contained in a two-ounce bottle. Its specific gravity was 1·0234, and the earthy matter, after it had been allowed to stand some time, occupied nearly one-third of the height of the



bottle. The earthy matter was in the form of a fine white powder, and was found to consist of the mixed phosphates. This urine, when first voided, reddened litmus-paper, and contained a large portion of urea, and fully the usual quantity of pale coloured lithic acid. At other periods of the day, particularly during the morning, he is conscious of a sense of tightness or fulness of the abdomen, from which he is relieved by a fit of diuresis, during which he voids large quantities of limpid colourless urine, nearly free from all sediment.

I had likewise an opportunity of examining a specimen of this urine, and found its properties exactly resembling the other, except that it was much more watery, and its specific gravity was only 1.0064.

The urine had a disagreeable smell, and was very prone to putrefaction, in which state the smell emitted was peculiarly offensive. It may be also observed, that the urine passed without difficulty or ardent desire, except what arose from its quantity, which he supposed amounted in twenty-four hours to four or five quarts.

Ordered *pil. saponis. c. opio. gr. v. bis die.*

August 22.—Found instant relief after taking the pill; urine reduced to three quarts in twenty-four hours. States that the white sediment has nearly disappeared. Complains of being very costive.

On examining the urine voided yesterday morning, its specific gravity was found to be 1.0137, and there was a slight deposit of the earthy phosphates; but its properties in other respects were nearly as before.

The urine voided this day at six in the evening, was

almost perfectly colourless and transparent, and had a specific gravity of only 1·0027.

*Contr. pil. saponis. c. opio. gr. v. ter. die. Sumat cras mane olei ricini, ℥i.*

23rd.—The castor oil affected the bowels moderately, and afforded him some relief. Continues tolerably free from pain; the urine differing in appearance and specific gravity from common spring water, though it still emitted, in a less degree, the same offensive smell as formerly.

29th.—Felt better for three days after I last saw him. The urine diminished in quantity, and the white deposit entirely disappeared. For the three last days the pain has returned, and the urine has increased in quantity. What was passed this morning had a specific gravity of 1·0242, and deposited a very copious mucous cloud, but no earthy sediment; the quantity of urea was excessive.

*Pil. saponis c. opio gr. x. ter die.*

September 2nd.—Feels a great deal better. Little or no pain for the last three days. The urine deposits no white sediment, and he passes only a little of the clear urine in the afternoon, the whole amounting in twenty-four hours to two quarts. The specific gravity of what was passed this morning was 1·0201, and it contained an excess of urea. He has been costive for the last two days.

*Pil. saponis cum opio. gr. x. ter. die. Ol. Ricini ℥i. cras mane.*

12th.—Almost quite free from pain, and tried in consequence to resume his work, but was obliged to desist,

on account of a distressing sense of weakness in the back. His appetite is much improved. He sweats less than usual, and is not sleepy. Rather costive. Urine reduced to two quarts in twenty-four hours. Specific gravity of that voided in the morning, 1·0174.

*Pil. saponis c. opio gr. x. mane, meridiæque et gr. xv. hora somni. Olei ricini ℥i. cras mane. Emplast. picis. comp. lumbis.*

19th.—Took the castor-oil, which induced a diarrhœa that lasted for two or three days, during which time his pain returned. It was less severe, however, than usual, and was accompanied by a peculiar sense of coldness and weakness in the calves of his legs. Has now recovered from the diarrhœa, and all the other symptoms, and has not felt so well for many months. Urine in twenty-four hours almost two quarts, and quite free from earthy sediment. Specific gravity of that voided this morning, 1·0207.

*Pil. saponis, c. opio gr. x. ter. die.*

November 30th.—I saw this poor man again, and was happy to hear that he had continued quite well from the last date, and had followed his work as usual, having taken the pills occasionally. He had recovered his ordinary strength, &c., and his urine now abounded in the lithate of ammonia.

In September, 1822, nearly two years after the last date, I learned that this patient had remained quite free from his complaint, and was then so well in all respects as to be able to follow his work as usual. Since that period I have not heard of him.



## OBSERVATIONS.

We continually find, that patients without injuries of the spine, secrete at different days during the same illness, various earths, acids, and alkalines ; but the fact of injuries of different parts of the spine producing certain secretions, prove the controlling power of the spinal nerves over certain secreting organs. Thus, ere long, we shall be able to direct our remedies more efficiently to restore normal secretion, and not, as now, merely decompose the already secreted simple or compound deposition arising from deranged nervous action, but be able to determine not only the particular source in the nervous system, but whether the particular secretion depends upon excessive or insufficient nervous energy.

It is usual to attribute various depositions to local causes, acting as irritants upon certain tissues of various organs, as the kidneys and other glands, urinary and gall-bladders, the skin and mucous membranes of the stomach, intestines, and of the sexual organs of both sexes ; also the exhaustion, irritability, and debility so characteristic of this class of disease to the character of the deposition, mistaking the effect for the cause, which I think may be more rationally sought for in the circle of nervous energy formed by the cerebral, spinal, and ganglionic systems of nerves, and proved, by the effect of their derangements from physical causes.

Drs. Rolls, Henry, Cheselden, Brodie, Forbes, Rayer, &c., have recorded their observations of the kid-

neys secreting different salts and earths, according to the part of the spine injured.

Dr. Prout has observed the same taking place after injuries of the spine being received, but does not attribute to the spinal nerves, or to their ganglions, the ruling influence over the tissues to secrete different secretions, Dr. Hall has suggested that the ganglionic system controls the chemical operation of the body ; Dr. Prout, however, makes the following observations in his last edition, page 312, on disease, as effect connected with the appearance of these incidental matters in the urine and elsewhere, or with respect to the origin of the different incidental matters ; a notion may be formed from the properties of the incidental matters of the general nature of the tissues, &c., particularly affected. Thus the presence of magnesia (in the urine or elsewhere,) is supposed to indicate the destruction or mal-assimilation of a tissue intimately connected with the nervous tissues, and probably of an albuminous character ; the presence of lime to denote the destruction of a tissue belonging to the dermoid textures, and partaking of a gelatinous character ; the presence of phosphorus and its compounds, to denote the destruction of the nervous tissue ; the presence of potash and soda, to denote the destruction of the mucous membrane, and the exudation of the serum of the blood from the tissue immediately below it ; and the presence of ammonia (originally derived from the gelatinous tissues through urea,) from the decomposition or malformation of the urea, from which the carbonate of ammonia is immediately produced.

Whether the above view be admitted regarding the origin of the incidental elements, or whether with some we suppose such incidental mineral matters to be generated by organic operations on the spot, still, on this last supposition, as the formation of the earthy matters is beyond the reach of common chemistry, and therefore must be a *vital* act, a great and extraordinary expenditure of nervous action in either case must be indicated, particularly when the phosphates of magnesia and lime are in excess.

Since injuries of certain parts of the spine produce different secretions and symptoms of morbid action, we may rationally admit, that, without mechanical injuries, the spinal nerves do govern the secretions, both in a state of health and disease. Hence the good effect of removing irritable matter from the bowels, counter-irritants, soothing and stimulating applications to the skin over the spine.

Electricity and galvanism have long since been enlisted as remedial agents for several diseases with the utmost success. Electricity has been extensively used for the cure of rheumatism, ague, hysteria, and for restoring the normal menstrual function of the uterus; indeed, highly respectable practitioners for the last fifty years have regarded electricity as a specific for rheumatism. The celebrated Tissot was unquestionably the first who treated scientifically on the medical application of electricity, exhibiting also just principles on which to found this process. Bertholon added much to our stock of knowledge upon electricity, although he



ran rather wild when he framed his peculiar theory, according to which all diseases would appear to be either from the want or abundance of electrical fluid in the human body. However, on the broad basis of experience, he suggests staple principles, by which we were taught that electricity increases or promotes the circulation of the blood, and produces this effect, particularly by what is called the *negative bath*.

Also he taught the happy medium between the violent shocks recommended by some practitioners before him, and the timid practice of electrifying followed by others. The happy medium was selected in applying electricity to promote the free circulation of the fluids, and particularly the blood, to accelerate perspiration, increase animal heat, and promote all the secretions and excretions of the body, particularly when diminished by atonic causes.

Electricity is attended with pernicious effects, occasionally in *active* or *sthenic* diseases. Also when the system is relaxed and debilitated, and accompanied by a high degree of excitability in the organs of sensation or of voluntary motion. It is found useful in *passive* or *asthenic* diseases, particularly in cases accompanied with diminished susceptibility of stimuli in the organs of sensation and motion, provided that such disorders at the same time be manifest from the periodical returns of uncommon muscular action, or by occasional excess of the sensitive faculty in any particular part.

With due observance of the above simple facts, it is decided by ample experience that both the electric bath and gentle application of the electric fluid to any parti-

cular part of the body, are always safe, as well as extraction of sparks.

This valuable remedial agent has of late years been but partially used, in consequence of the trouble of keeping an electrifying machine in a dry warm room, always in a state to operate efficiently upon the patients of medical men; therefore it is superintended frequently by unskilful men, who abuse its use by recommending it for the cure of every disease. Thus discredit was eventually thrown upon its well-established superior claims, as a remedial agent for certain complaints.

This want of confidence both by medical men and the public, is likely to be restored by Dr. G. Bird, at Guy's Hospital, where he superintends the use of electricity and galvanism, as remedial means for the recovery of some patients of that institution.

It may here be as well to observe, that "electricity and galvanism are but different names for the same agent," the matter being in a different state of tension or elasticity, and much greater in electricity than in galvanism.

When a person is placed on a glass stool and connected with the prime conductor of an electrifying machine in action, he becomes by induction electro-positive, and, by absorption of negative electricity from the air, a silent discharge continually occurs, during which heat is involved, the circulation becomes quickened, the secretions become generally more active, and perspiration breaks out. Hence it indicates the advantage of its application in torpid affections of the skin and mucous membranes, and of other organs.

Dr. G. Bird has published in Guy's Hospital Reports for April, 1841, the results of his experience in the electrical ward, upon patients who were sent there as a last resource ; notwithstanding the unfavourable class cases, still the result was most satisfactory.

Dr. Bird relates cases of chorea, paralysis, and amenorrhœa, cured by the aid of electricity and occasional purgatives. He cured nearly the whole of thirty-six cases of chorea that were sent to his ward. In every case he confined the treatment to sparks taken in the course of the *spinal column* every other day for about five minutes each time, or until the papular eruption made its appearance. The Doctor makes the following important remark respecting the application of this agent :—

“ I have never seen any good effect to result in cases of chorea, from the transmission of electric shocks along the affected limbs ; on the contrary, in every instance the involuntary movements have been increased, often to an alarming extent, and if employed when the patient was convalescent, it has invariably aggravated every symptom, and often rendered the patient as bad as when first admitted under treatment.”

Again he says :—“ There can be no doubt that electricity really exerts a decided, not to say specific, influence on these affections, and although on its first application all the symptoms often become increased, yet where it has been persevered in, in thirty-five of the thirty-six reported cases, it has either completely cured or greatly relieved the patient.”

In the cases in which it failed, he says there was but little doubt that disease of the membranes of the spinal



cord existed. The Doctor conceives that the electric sparks, when drawn from the spine, act as an irritant, or counter-irritant, from the fact that the rapidity with which the patient's symptoms are relieved, is nearly in ratio with the facility with which the peculiar popular eruption makes its appearance.

In cases of paralysis that depended upon some persistent structural lesion, whether produced by accident or otherwise, not the slightest benefit was derived from its use; but the result of the application of electricity was very successful in paralysis, whether of sensation or motion, or both, when depending upon exposure to cold or rheumatism, upon some functional affection often of a local character, or upon the impression produced by effusion in some part of the cerebro-spinal centre, which had become absorbed under the influence of previous treatment.

In cases of "dropped hands," where the general health was not much deranged, the use of electricity over the upper part of the spine, so as to influence the origin of the spinal nerves forming the axillary-plexus, and drawing a few sparks occasionally from the paralyzed extensor muscles of the wrist and hand, was generally successful, and by administering occasionally a purgative.

The Doctor found that electricity was of little or no use when the patient was of cachectic habit, until the digestive organs were more or less set right, after which it was usefully applied, and recent cases of paralysed parts, small shocks transmitted along the course of the affected nerves, have considerably accelerated conval-

escence ; but, in chronic cases, he has repeatedly seen a cure effected by drawing sparks from the *spine* on alternate days, for weeks after shocks had been passed along the paralyzed parts in vain.

### RHEUMATIC PARALYSIS.

Of those cases that applied at the Hospital, their common history was, that after exposure to damp and cold, and sudden alterations in temperature, slight febrile attacks came on, followed by inability to move one or other of the limbs.

Sensation was in general not impaired ; but the paralysis of motion was generally more or less perfect, after which long continuance for want of action, the muscles of the limb affected became necessarily atrophied, when the chance of relief from any kind of treatment is proportionably diminished. Before the wasting of the limb, the influence of electricity is very successful, frequently restoring power to the paralyzed limb in a very short time.

The Doctor says, that in the few instances of local paralysis that have fallen under his notice, the power of motion has been alone lost, sensation having continued tolerably perfect ; and the local application of the current from the electro-magnetic machine, has been generally successful. In addition to this local treatment, the general health of the patient has been attended to, by the administration of appropriate medicines, and a vigilant attention to diet.

Every one must be aware of the occurrence of cases in which paralysis generally affecting one side of the body comes on, as mere effect of congestion or of effusion, which under the action of depletion and mercury, can be completely removed; and yet the effect of such morbid action, the paralysis itself, still remains. Cases of this kind will generally do well by time, aided by the application of friction, baths, exercise, &c.; yet convalescence will be extremely protracted.

Here the passage of a few electric shocks through the limbs, so as to arouse, as it were, the dormant functions of the nerves, will at once frequently restore as complete power over the affected limb as the state of the muscles, weakened by previous disease, will admit of. When the paralysis has been of longer date, or the cause producing it of a more persistent character, it will be found necessary to continue the application of the electric shocks for a longer period of time.

In these cases, it will generally be found more convenient to allow a rapid succession of shocks to pass through the paralyzed limbs, by means of the interrupted current from the electro-magnetic machine. Indeed, so far as my experience has extended, I am far more inclined to place reliance on the current of electricity yielded by this machine, than by that obtained by means of friction; as we have at our command an enormous quantity of electricity of high tension, added to which, its application is much more convenient, and requires less tact than when the common electric machine is employed.

The truth of the statement here made, of the class of



cases of paralyzes in which electricity may be employed with every probability of success, is supported by what we see in its employment in the local paralyzes following the application of mechanical injury to a limb; for wherever the nervous trunks supplying a limb are lacerated, or otherwise mechanically injured, we can hold out no hope of relief from the application of electricity, or any other remedy; whilst in those in which, from the shock of the blow applied to the limb, the nervous trunks had been only functionally paralysed, their structure remaining unaffected, the passage of the electric current effected a complete restoration of the previously deficient nervous power of the limb.

In accordance with this reasoning, we find those anomalous forms of paralysis connected with hysteria generally yield to the application of a few electric shocks. I have, indeed, repeatedly seen hysteric paraplegia yield so rapidly to the effect of an electric shock, as strongly to impress those who were watching the case with a conviction that the whole disease was simulated.

#### AMENORRHŒA.

Scarcely any cases have been submitted to electric treatment in which its sanatory influence has been so strongly marked as in those in which the menstrual function was deficient.

The remarks previously made regarding the electrical treatment of chorea and paralysis, alike apply to amenorrhœa; so long as the patient is seriously out of health,

as when marked symptoms of chlorosis are present, scarcely the slightest benefit has ever resulted from the employment of electricity ; in fact, as this agent can in these cases be regarded but as a local stimulant, applied to an organ whose function is deficient, we could hardly expect the menstrual discharge to appear, when, from the deranged state of the general health, the womb is not in a state to supply the deficient secretion. The rule for insuring success in the great mass of cases of amenorrhœa is sufficiently simple:—Improve the general health by exercise and tonics ; remove the accumulations often present in the bowels by appropriate purgatives ; and then a few electric shocks, often a single one, will be sufficient to produce menstruation, and at once to restore the previously deficient function.

It is for want of attending to this rule that so many cases have been said to have been unsuccessfully treated by electricity ; and to this statement I must oppose all the experience acquired from the cases treated in the electrical room of Guy's Hospital ; for, with but one or two exceptions, every case in which the general health was not too severely deranged, as by chlorosis, has been successful ; of course not including those who, from timidity or other causes, never appeared but once or twice at the hospital.

The mode of applying the electric shocks is the following :—Let the patient be placed on a chair or stool, press the brass knob of a director against the sacrum, and if the stays be loosened, so that only the linen intervenes between the latter and the knob, no further exposure is necessary. A second director, furnished

with a chain, connected with the outside of an electric jar, is passed by the female attendant under the patient's dress, and the knob pressed against the pubes. The jar is then charged, and its ball touched by a third director connected with the one held against the sacrum by means of a chain. The shock thus passes through the patient's pelvis, and should be repeated ten or a dozen times. The jar employed should hold about a quart, and be about half charged.

In general, whenever the menstrual discharge has appeared under influence of the electric treatment, I have directed the remedy to be intermitted as soon as the flow has been fairly established, and its use to be re-commenced about a week before its expected return.

In amaurosis, the results of the trials were too conflicting to afford any satisfactory conclusions. In the majority of instances it certainly did no good. In a very few it appeared to afford some relief; but in none did it effect any thing like a cure. In various cases of deafness, the results of the application of electricity were similar.

In chronic rheumatism, especially in sciatica and lumbago, a considerable alleviation of suffering was frequently effected by drawing sparks from the seat of pain; but the cases submitted to treatment have not been as yet sufficiently numerous to warrant any general conclusions.

Electricity has never been of the slightest service in the treatment of convulsive affections in which the brain was involved, as in epilepsy; whilst, as already stated in chorea, in which the brain is generally unaffected,



the result of the application of electricity was most gratifying.

Mr. Adams has reported, in No. 19, 1842, of the *Medical Gazette*, some interesting trials of electricity in Traumatic Tetanus, after opium, croton oil, and strichnine, turpentine, &c. had been used with no decided permanent good effect, in a boy, when the symptom of opisthotonos became apparent, and after large doses of opium had been administered with no benefit; he was placed on a stool with glass legs, a stream of electricity was transmitted, and sparks were drawn from the spine, which for a little while increased the spasms, but shortly after a repetition of the means produced a decided relaxation of the spastic curvature of the spine, and straightened it, and the boy said he was well; but the symptom recurred, and the sparks were repeated every four or five hours with advantage; but finally its beneficial effect was not visible, and 1-16th of a grain of strichnine with opium was administered every two hours with greater advantage than before, and the boy recovered.

In another case, of a man, 45 years of age, in whom tetanus supervened on a punctured wound of the great toe, after a twelfth of a grain of strichnine and opium had been given every two hours, which brought on the usual effect of strichnine, that is, spasms of his legs, to such a degree that he said he thought his legs would be torn from him; these severe spasms came on after a few doses, and the man refused to continue the medicine, consequently opium was administered; "but the symptoms of tetanus again increased in severity, when he was

electrified, in the same manner as the boy, which immediately relieved him, so that he was enabled to walk afterwards to his bed, having before been unable to stand, from the rigid spasm of his legs. Whenever the tetanic symptoms re-appeared, he was electrified with advantage, and the man considered that electricity cured him."

Numerous cases of trismus, tetanus, convulsions, chorea St. Viti, aphonia, deafness, and paralysis have been recorded, during the last forty years, wherein galvanism was used either wholly or partially successful, comprehending, of course, only such cases as did not arise from organic defects, or pressure upon a nerve from tumour, or the effect of luxation of one or more vertebræ, or of any other joint. In short, only such cases as depended upon topical debility or asthenia of the nervous system, or in cases wherein the secretion of mucous or cerumen might be insufficient.

I have found it successful in appropriate cases of deafness, catarrhal affections, and in cases of loss of taste; also in cutaneous affections, and particularly in obstinate cases of urticaria and constipation of the bowels, inactivity of the kidneys, and in cases of undue irritability of the bladder and diuresis, as well as under opposite circumstances, suppression of urine, particularly in hysterical females.

In spasmodic strictures of the urethra in young men, I have employed galvanism successfully, after the application of bougies and constitutional treatment had failed, under the directions of the leading surgeons. The wires were applied in all cases of affections of the pelvic

organs to the lumbar and sacrum, and to the pubes and thighs, and in affections of the kidneys from the middle of the dorsal spine to the anterior points; and in cases of constipation and indigestion, wherein undue acid was secreted in the stomach and intestines, and in bronchial, and catarrhal affections from the first cervical vertebra to the lower part of the sternum and pubes, and in cases of cutaneous affections, loss of taste, voice, and hearing, the electric bath was used; and occasionally, cases of habitual constipation of the bowels, were similarly treated with success.

In cases of deafness, depending upon want of excitability of the acoustic nerve, or of humid natural secretion, the wires should be applied to the mastoid process, or to the auditory canal, and to the eustachian tube, or from the latter to the hand on the same side; and in appropriate cases of loss of voice and hoarseness, they may be applied on each side of the larynx, or from the back of the neck to the larynx.

I have found galvanism exceedingly useful in some severe cases of indigestion, wherein the stomach secretes acid unduly, causing those symptoms already noticed, such as head-ache, constipation of the bowels, dry, hot skin, high-coloured urine, lowness of spirits, &c.; in short, wherein every thing that the patient ate was converted into acid in the stomach, generally denominated heartburn. Of these cases Dr. Prout, in the last edition of his work, page 87, says:—

“ Alkalies exert no curative effect, that is to say, they will not prevent *future* acidity; on the contrary, when taken in large doses, and at improper times, the effect of



alkalies is to cause an absolute increase of acid. Thus when a large quantity of alkalies are taken into an empty stomach, the immediate effect is that the stomach, in endeavouring to resume its natural condition, throws out an additional quantity of acid to neutralise the redundant alkali.

“If the constitution be sound, the stomach, in spite of the Doctor and his alkali, usually gains the ascendancy, but at the expense of extraordinary labour, in the secretion of a greater quantity of acid. If, on the contrary, the vital powers of the stomach be weak, the Doctor may conquer; but at the risk of still further enfeebling the vital powers of that organ, and in both instances the general result will be, that the diseased functions of the stomach producing acidity will be augmented rather than improved. The beneficial effects of alkaline remedies, therefore, are confined, as we have stated, to the neutralisation of acids already formed, and thus of preventing their secondary effects on the system. The primary derangements of the vital operations on which the morbid formation of such acids depend, must be combated by the empirical means before spoken of as mere antacids. The alkaline carbonates are in general infinitely preferable to the pure alkalies. To obtain their maximum effects also, they are usually much better exhibited alone. Those who combine antacids with tonics defeat their purpose, both with respect to the antacid and the tonic; as, to ensure their maximum effects, the two classes of remedies require to be given at totally different times, relatively to the digestive processes.”

Notwithstanding the excellence of these practical rules, still I have found them, as other practitioners occasionally, insufficient to relieve the patient, and although I have found the alkaline bath, and friction to the spine, &c., as already directed very satisfactory, yet galvanism is highly to be commended not only from its convenience, ease, and simplicity of application, but from the great advantage the patient quickly derives, by merely placing the wires on the nape of the neck and pit of the stomach, the sacrum, &c.

I have had lately two cases thus successfully treated, after the use of alkaline baths, friction, &c. had failed to give satisfactory relief, together with the usual means under the superintendence of other medical men, before they had placed themselves under my direction.

Every day practically proves, that a great many medical and surgical cases that resist the usual mode of practice, may readily be cured by electricity.

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## CHAPTER XIV.

UNTIL within the last three or four years, it had been the fashion for the previous forty, to regard and treat most cases as inflammatory by bleeding, purging, starving, &c. The ill success attending the plan induced some practitioners to inquire more minutely into their nature, and consequently have been more successful in their treatment, by soothing means and counter-irritants. Amongst the modern practitioners, Dr. Pearson, formerly a physician to St. George's Hospital, was, I believe, the first to recommend opium for inflammatory action of the bowels; but in his time medical practitioners, and even students, were too sceptical either to believe, or even to give a trial to his plan, although his patients were continually effectively treated at the hospital, according to his soothing plan.

Of late, opium has been again recommended for acute internal inflammations by several practitioners, and by Dr. Christison, Professor of Materia Medica in the University of Edinburgh, who has published his views of the advantage of opium in cases of inflammation of the mucous membranes, in the *Monthly Journal of Medical Science* of that city, for February, 1841.

I have pursued the soothing plan of my old friend, Dr. Pearson, ever since I witnessed his practice more than twenty-five years ago, with the utmost satisfaction. And in support of the practice, I transfer Dr. Christison's



observations, from my conviction of their value in practice, and the advantage of opium, not only in inflammation of the mucous membranes, but in cases of acute inflammation.

Dr. C. observes thus :—“First, The varieties of internal inflammation which best exemplify this action of opium, when given singly, are the inflammations of the mucous membranes. Of such diseases there are at least four, which may often be thus successfully treated, without almost any other remedy, namely, coryza, catarrh, influenza, and dysentery.

“As to *coryza*, most persons on feeling its approach are content to submit without a struggle to the infliction, and eschewing alike physic and physician, let their ‘cold in the head’ take its own way. But few would do so were they aware how easily and agreeably so tormenting a visitor may for the most part be got rid of. For twenty years I have been accustomed to see it stopped at once by a full opiate given on the first day of its appearance. Let the patient avoid food after dinner; use liquids sparingly; take a full dose of muriate of morphia, or Batley’s solution, at bed-time, and breakfast before getting up next morning, and he will then commonly find the secretion in the nostrils permanently inspissated, and the complaint either gone entirely, or at any rate no longer a source of particular annoyance. During the same period I have often seen a common catarrh without fever cut short in like manner, if the medicine be taken on the first, second, or, perhaps, even the third day; or, more generally, it seems to pass at once over the intervening stages to that in which thick sputa are coughed

or hawked up without labour, and without irritation in the chest or windpipe. *Febrile catarrh* also, may be checked abruptly in the same way, if patient and physician are lucky enough to meet during the first or second day at farthest. But here, probably, the next mode of employing opium is fully more successful. I have also repeatedly seen epidemic *influenza*, thus checked at the outset,—the local inflammation vanishing, while the strange lassitude, listlessness, and *ennui*, so characteristic of this disorder went on as usual for some days during convalescence.

Although an authority so recent and so eminent as Mr. Pereira, states that “*in dysentery*, opium can only be used beneficially in the latter stages, and then with great caution,” *Mat. Med.*; this is another and more formidable malady, which, if I mistake not, may be added to the mucous inflammations, capable of being cut short in the early stage by opium.

I doubt whether Mr. Pereira’s doctrine will be received at all as a general proposition. There is not a better way of treating an ordinary mild dysentery at the commencement, than by the familiar practice of alternate opiates and laxatives. But what is more connected with the matter now chiefly under review is, severe epidemic dysentery, as it occurs at times in this country. The cure, when early begun, may be commonly trusted to, if I may rely on my own experience, to opium alone; not used, however, “with great caution,” but given boldly and often.

Secondly, the method of using opium along with ipecacuanha as a sedative, anodyne, and sudorific, in the

early stage of acute inflammations, is probably applicable to a considerable number of diseases of the kind. Those alone in which I have employed it are common sore throat, catarrh, and acute rheumatism.

From frequent observation I am inclined to think, that there are few cases of *acute cynanche tonsillaris*, which may not be cut short at the outset by this treatment, if they are subjected to it about the close of the first, or at all events before the close of the second day. Of several instances I have met with to this effect, the following are examples :—

#### CASE.

A lady, rather subject to febrile *cynanche tonsillaris*, was attacked with rigors in the evening, and sore throat during the night. Next day, the right tonsil was much enlarged, and red, and the posterior palate and velum red and thickened, the pulse at the same time being one hundred and twenty, and sharp, and the febrile oppression considerable.

#### TREATMENT.

In the evening, and, therefore, within the twenty-four hours, ten grains of Dover's powder were given at intervals of half an hour, till half a drachm was taken. Perspiration, which soon broke out gently, was kept up for fifteen hours by warm drink.

In twenty hours after the powders were taken, the



pulse was seventy, the pain in swallowing gone, and the swelling and the redness insignificant; and, on the subsequent morning, she was able to leave her bed.

This attack happened eight years ago at least, and the disease has not returned since.

### CASE.

A lady, about thirty-eight, long a martyr to cynanche tonsillaris, which particularly for three years before, had returned during the winter, ended in abscess of one or both tonsils, occasioned great and protracted torture, and had left chronic enlargement of these glands, was attacked in the same way for the fourth time.

When I first saw her on the fourth day of the disease, the tonsils were greatly enlarged, especially on the left side, and blocked up nearly the whole throat. She spoke with much difficulty, could not swallow without long, painful, and repeated efforts, and breathed noisily and with labour. The pulse was one hundred and sixteen, full and soft. The febrile oppression and anxiety were great.

### TREATMENT.

A large blister had been applied to the throat, and purgatives taken freely, but without the slightest benefit; the attack seemed too far advanced to be arrested; but as fluctuation could not be detected in the larger tonsil,

Dover's powder was ordered as in the former case. Sweating ensued : ere long, warm drink could be swallowed with no great difficulty, and when the perspiration had thus been kept up for twenty-four hours, the pulse had fallen to sixty-four, the swelling of both tonsils had materially subsided, and the febrile anxiety had ceased, together with the local uneasiness, in a great measure. In two days more there was little complaint left, except weakness. In the course of time, the chronic enlargement of the tonsils disappeared, and this lady, like the last, has never had another attack, though five years have elapsed since the one now described.

The tendency to cynanche tonsillaris, certainly seems to grow with its repetition in severe form ; and I have met with other instances besides these two, where an abrupt early cure seemed to break both the attack and the liability. The only objection, or rather obstacle, to this plan of cure is, that patients, unluckily, will seldom put themselves in the way of profiting by it, as the practitioner does not often see febrile sore throat, till the chief question he has to consider the head of treatment is, whether an abscess in the tonsil is to be opened by nature or the lancet.

The Doctor says, that he has seen *febrile catarrh* arrested in the same manner, and proceeds to say, whether *acute rheumatism* may be also treated successfully by the like means is a matter of doubt. At the period at which medical men, generally, first come in contact with a case of it, sweating by Dover's powder will not succeed singly ; but this is a powerful and speedy measure, if immediately preceded by general blood-letting.

Perhaps, then, the present topic would be better deferred, and taken up under the next head; but since it is the action of opium as a sudorific, which seems here the source of its curative influence, while in the third mode of using it for arresting acute inflammatory diseases, this kind of action is not at all essential, the treatment of rheumatism will be more conveniently disposed of in the present place.

There are physicians of undoubted authority, who maintain that acute rheumatism can scarcely be cut short,—that, do what one may, the patient must endure upwards of three weeks of agony, and three weeks more of stiffness, weakness, and occasional aches. I am convinced, however, that, at least in young adults of a general sound constitution, a genuine acute attack may often be put an end to in a few days, by first drawing blood very freely to the approach of faintness, and then giving Dover's powder instantly afterwards, in the way mentioned above for inflammatory sore throat.

I have often observed that after sweating has been brought out and kept steadily up for thirty-six or forty-eight hours, the pulse fell to the natural standard from nearly double that rate; the white thickly furred tongue began to clean, the pains and redness gave place to numbness and want of power, recovery went on afterwards swiftly and without interruption, and the patient was able to leave his bed in a week.

The chief conditions for success are, that the bowels, previously opened if necessary, shall be let alone till the sweating is well over; that blood be drawn both largely



and to approaching syncope ; that the powders be given immediately afterwards, before the circulation recovers its state of excitement, which it will otherwise soon do ; this plan should be enforced before the close of the fourth day, but earlier if possible ; and that the case shall be real acute rheumatism, not one of the sub-acute or gouty rheumatism, as it is called.

Where for some days previously the local inflammation has been shifting from joint to joint, with irregular intermitting fever, I have once or twice tried to do without the preliminary blood-letting, but have not succeeded.

In one instance, that of a stout young cabinet-maker, copious sweating begun on the third day without blood-letting, and maintained for eight-and-forty hours, was of no avail ; but when repeated after one free evacuation of blood, it put an end to the disease abruptly in the way just described.

Thirdly, The treatment of acute internal inflammation by opium after blood-letting is now currently used by some practitioners ; but since, notwithstanding its efficacy, it is still not generally practised, it seems to need the support of further testimony than it has yet received from few who have taken public notice of it.

This mode of cure consists in withdrawing blood very freely from the arm till faintness approaches, just as in the ordinary way of treating acute inflammations, and then giving a large opiate, with a view to bring on sleep, or the calm reverie which in some people takes the place of sleep. The result is, that on the patient awaking, the general fever and local inflammation are found to be

subdued and broken, generally at once, but sometimes not till the repetition of the practice in twelve or twenty-four hours.

The conditions for successfully employing opium after blood-letting, are nearly the same with those for using Dover's powder in rheumatism. It is essential that the disease to be subdued, be in its early stage; that a deep impression be made on it by blood being withdrawn both freely and to the approach of faintness, and that the opium be given largely and immediately, so as to anticipate the renewal of reaction. Sweating sometimes ensues; but it is not at all a necessary condition for success.

The particular preparation of opium to be used is, perhaps, of no great consequence: I prefer the solution of muriate of morphia, or, failing that, the sedative solution of Battley. The dose of the former should not be less than forty minims for an adult male, and for others in proportion; and the dose of Battley's solution, which is certainly not so strong as its maker represents, should not be less than twenty-five or thirty minims.

Some conceive this treatment applicable only to inflammation of membranous surface, not to that of parenchymatous textures. I do not know any positive facts either on one side or the other of this question; but the statement is doubtful, if it be meant to apply to acute parenchymatous inflammations in their early stage.

“If pneumonia be regarded as inflammation of a parenchymatous tissue, which, although a common mode of viewing it, is rather incorrect, then there can be no

doubt that, in this particular instance, the treatment is most effectual on many occasions.”\*

#### SPASMODIC STRICTURE OF THE URETHRA.

About thirty or forty years ago, it would appear, by the medical works of the day, that diseases of the generative organs, particularly permanent and spasmodic strictures, and disease of the prostrate gland, were very common, and great importance was attached to Hunter, and particularly to Home’s mode of treating these cases, by either caustic or large bougies of the latter surgeon.

The severe cases, and still more the severe means adopted, with the intention to relieve the patients that were continually reported, frightened, I suppose, the young and old men, to regard every sensation about the generative organs as certain preliminaries of the worst consequences ; the alarmed sufferer quickly consulted his medical friend, who probably adopted, without much consideration, the usual plan of exploration with some kind of bougie, and thereby irritated the urethra, and fixing the patient’s mind to the part, to engender disease, or to render a simple one complex ; and, occasionally, when the original affection should have been removed, the means employed frequently gave origin to other diseases of a more unpleasant nature than the original.

In the present day, such cases are not entirely a mat-

\* *Braithwaite’s Retrospect of Practical Medicine and Surgery*, Vol. II. page 43 : a periodical of useful and well-selected papers.



ter of history, for I have witnessed frequent instances of spasmodic stricture treated for a permanent stricture, and cases of gleet, or irritable urethra, as spasmodic and permanent stricture.

In the numerous volumes of those who have written on strictures of the urethra, innumerable instances of this kind may doubtless be found, which to particularise would be much easier than a pleasant task.

I have lately met with a patient, who, after having had a bougie passed twice a week for about twelve months, without, however, being relieved, was told, I suppose to satisfy his impatience to get relief of his supposed stricture, that he had diseased prostrate gland or thickening of the coats of his bladder. When Mr. B. consulted me, I assured him he had no stricture, or any other disease of the generative organs. He was much surprised, and again consulted his medical attendant, who re-assured him of the nature of his complaint.

Mr. B. called again, and wanted me to use a bougie, which I declined, and recommended him to consult some other practitioner, which he did, and first consulted Mr. Copeland, and afterwards Sir B. Brodie, who both agreed in the opinion I had given. Suffice to say, that, by the aid of tonic medicines, and the urethra being left alone, he very soon lost all the symptoms of irritable urethra.

I select this case out of my note-book, from many somewhat similar cases, to show that some practitioners depend upon rules pointed out by authors of former days, and by imitating their too often confused and improbable statements, disappoint both themselves and their patients. It is, however, not my intention to treat of permanent

strictures, but I wish to assure practitioners that a case of irritable urethra may terminate in spasmodic stricture, and the latter in a permanent one, and that the former cases may be cured by applications of morphia, veratria, &c., to the sacrum, as well as prostatic affections.

I have found that most men subject to spasmodic strictures and suppression of urine, are like hysterical females, generally of the nervous temperament, and are as much injured by passing a bougie, as the hysterical female is by using a catheter for suppressed urine; indeed, both are generally alike remedied by the same therapeutical principles—warm baths, antispasmodic medicines, friction to the spine, veratria well rubbed into the sacrum, with or without tincture of aconite, warm glysters with laudanum, or galvanism, applied from the loins to the pubes. By the aid of some of these remedial agents, I have seldom had occasion to use either a bougie or catheter. In some instances of spasmodic stricture, I have found croton oil, applied along the urethra and perineum, exceedingly serviceable; and on the sacrum in females for suppression of urine, blisters are occasionally, but very rarely, required.

#### ON THE PROPER MODE OF USING WATER AS A REMEDIAL AGENT.

The illustrious Grecian, Hippocrates, the father of his art, and the prince of physicians, has said, that a physician should be the minister of nature, and “that the end of physic is either to carry off diseases, or to

moderate their violence :” accordingly his indications in acute diseases were “to mitigate the symptoms when too violent, and to assist nature in her business of concoction or evacuation of febrile matter.”

His practice was peculiarly simple, effective, and very judicious, singularly patient and watchful, compared to the present most active practice, but frequently most *unreasonably* so, even dangerous, and fatally frustrating the benign object of our art. A modern practitioner when called to an active case of disease, as well as in others, will apply more remedies in an hour than the illustrious native of Cos would have done in a month or more.

It is by no means unusual to be called into consultation upon even a recent active case, to find the following means have been used by the family medical adviser, a few hours after he is requested to see the patient—bleeding, purging, sweating, blistering, hot or cold fomentations, friction; or the cupper is performing his duty, or the nurse applying the leeches, whilst the cook is preparing the gruel! In such a case, I found the difficulty was to ascertain whether the patient was suffering most from the disease, or consequences of the active treatment.

This perplexity is neither unimportant, nor likely to be uncommon, whilst patients choose to remunerate professional men at per item, which has stamped the public mind with an idea that a disease is only to be cured by great doing, and much medicine; hence the general practitioner is compelled, in self-defence, to keep up the delusion.



Whilst, however, the modern practitioners may be considered too active in their treatment, Hippocrates, Galen, and their disciples, might have been, on the contrary, insufficiently active ; therefore the truth probably lies between the extremes.

Notwithstanding morbid anatomy, physiology, chemistry, and materia medica are now infinitely better understood than they were in the days of Hippocrates and Galen, still we are very little before the ancients in the penetration which discovers the precise remedy for a disease, or the skill to know the precise mode in applying the remedy. This may be on account of the many collateral helps we now have, so that we seldom study nature in her original character, but see her in a second-hand situation, often deformed by the injudicious narrator, or disguised and fashioned by the plastic hand of the theorist, to suit a favourite hypothesis. Some writer has observed, that “the difference between a good physician and a bad one is very great ;” but the difference between a good physician and *none at all* is often times very little.

It is the judicious application of remedies that constitutes true skill in medicine, and not the knowledge of the properties and doses of all the drugs ever used. Eloquence has been quaintly defined to be the aptest words in the aptest places ; and so a skilful physician is he who administers the aptest medicine in the aptest circumstances. Such was Hippocrates : he was all eye, ear, and a vigilant sentinel. Every thing relative to a complaint was minutely attended to ; and with a dexterity of inference probably unknown to a modern practi-

tioner, he knew what was to be done, and the precise moment for doing it, having studied nature as penetratingly as indefatigably. No symptom, no indication escaped him ; and by restricting his practice to the suggestions of the complaint, he anticipated their approach, and seldom failed to give relief. His doctrine stood firmly for four hundred years, ere it was found too simple for the profound speculations of after times. Asclepiades rejected it, and set up another, which happily did not last long, but was overturned by Themison, who attempted to cure all diseases by bleeding, purging, and cold water. Theories, however, now multiplied fast, and new systems of medicine appeared every day. We may trace, for many centuries past, one theory overturning another ; yet each in succession promising itself immortality, long before and after the birth of Galen, who seemed to be born for the restoration of the Hippocratic practice, that again put a stop, for many centuries, to new theories ; but it was eventually once more destined to sink under opposition, to give way to new practice. Argentarius, Pereira, and Fernelius began the attack on the Galenic mode, which gradually declined, till Paracelsus and Van Helmont gave it a fatal blow. After a second eclipse of its merit, it has partially revived within the last century and a half, under the fostering hands of Sydenham and Boerhaave, who incorporated the ancient practice with their own, and, we may safely add, owe much of their reputation to the diligent study and imitation of Hippocrates' simple mode of practice.

## CHAPTER XV.

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### ON BATHING, &c.

FROM the writings of learned men, and the most authentic historical records, it appears that no nation, however barbarous and uncivilized, has yet been discovered totally unacquainted with diseases, and the knowledge of remedies.

The various circumstances that might lead to the discovery of medicinal virtues and powers are with difficulty ascertained. The learned Dr. Cullen has suggested, that the rude and ignorant must have been directed to the invention of remedies by the instincts arising in certain diseases by accidental observation, or by random trials, to which pain and uneasiness often lead. It seems probable, therefore, that cold water has been in the list of remedies among all nations from the earliest ages.

The use of water as a common drink, and its being so well adapted by nature for the various purposes of animal economy, must soon have attracted attention for the cure of diseases ; and as bathing has been universally



practised, experience has proved that the external use of it is no less beneficial and safe in most cases.

If we look into old writers on physic, we shall find that cold water has been recommended and employed in fevers in the most ancient times ; and it might have been expected, from its well-known properties and good effects, that the use of it would have continued, and have been brought into general practice, but it has sometimes been highly extolled, and at another time almost totally neglected, which must be imputed to practitioners in physic searching after more compound remedies, and therefore despising the simplicity of water ; and, moreover, to their observing it prove very useful in some instances, yet attended with pernicious consequences from misapplication in other cases.

The first author who notices the use of cold water in diseases, together with almost every thing important to the science of medicine, is Hippocrates, who appears to have been a strenuous advocate for the use of it, both as an internal and external remedy, since we find

#### A CASE,—(7, *Book I.*)

The patient drank largely of cold water, and had it poured upon his head, and the same virtues are ascribed by him to this method as to cold baths.

If the internal use of cold water was only known to Hippocrates, as said in a work published about the beginning of the last century, by Sir John Floyer and Dr. Baynard, entitled *Psychrolusia ; or, History of Cold*

*Bathing*, he would not have given directions about affusions, lotions, and fomentations, as he had done in his tracts upon the use of liquids, and upon the diet in acute diseases, if he had not understood the principles of their application. Besides, it seems probable that he was well acquainted with the necessary cautions to be attended to in applying the affusion, or, what he terms, perfusion; since, to supply the deficiency of thermometrical observations, he advises the skin of the patient, or of the person who pours on the water, to be the criterion of the degree of cold or heat, and he cautions against proceeding to any great excess, which might prove injurious. He also recommends cloths wetted with cold water, to be applied where the patient complains most of heat in typhus fever. This practice answers to the “*lavatio frigida*,” as practised by the late Dr. Gregory, at Edinburgh.

Although Asclepiades, Celsus, Galen, and many other old authors, have noticed the use of cold water, it does not, however, appear that they generally well understood the affusion of it upon the surface of the body, or that such a mode of applying it was in great repute among them. Yet we find Aretæus, in his chapter *De Curatione Phreniticorum*, advises the liberal affusion of cold water upon the patient; and Galen also practised ablu-tion in ardent fevers; and in *Lib. X., De Methodo Medendi*, he has laid down rules for the proper application of it; and other writers have recommended, in vertigo and inveterate head-ache, “*ut caput frigidam aquam perfundant.*”

The antiquity of the external application of cold

water, may, perhaps, be further illustrated by the relation of

### AUGUSTUS CÆSAR'S CASE,

as mentioned in his life, by Suetonius :—

“ *Cum etiam distillationibus jecinore vitiato ad desperationem redactus, contrariam et ancipitem medendi necessario subiit, quia calida fomenta non proderant, frigidis curari coactus, auctore Antonia Musa.*”—Sueton, lib. ii.

No other work of importance concerning the application of cold water to the human body appeared, after the publication of Sir John Floyer and Dr. Baynard's, till the year 1785, when an ingenious Essay was published by Mr. Rigby, of Norwich, “ *On the Theory and Production of Animal Heat, and its Application in the Treatment of Diseases.*”

As far as relates to the simple abstraction of heat from the surface, the Author of that Essay seems to have said as much as has been since repeated by the late classical and ingenious author, Dr. Currie, and others since: the observations it contains upon the treatment of cutaneous diseases, (especially small-pox, scarlatina, and measles, and local inflammation,) are valuable, and deservedly claim attention.

History informs us, that the Indians of America have always practised cold immersions for the cure of fevers, to which they are particularly subject; nor is this practice confined to warm climates, since the northern



nations make use of that custom, both for the prevention and cure of diseases. The affusion and ablution of the body might first take its origin from the custom of purifying the body with water, in great esteem among the patriarchs, and imitated from them by the Egyptians, Greeks, and Romans; and the use of it, probably, became more general at the introduction of Christianity, when the ceremony of baptism was universally practised by what is called the trine immersion, or by placing the persons in the font, and pouring water on their heads and bodies three times.

It appears, then, that the external use of cold water has been known and practised from the earliest periods down to the present time; and this practice has not arisen as the mere suggestion of hypothesis, or the product of speculative inquiry, but has been established and confirmed by long experience. Yet, after all that can be found in ancient authors, upon the affusion in fevers and other diseases, it will be readily acknowledged that their practice was vague and uncertain; consequently left much for practitioners in after ages to suggest, and confirm, which has been of late ably performed by several practitioners of the day, and more particularly by the late Mr. Rigby and Dr. Currie, who, by a diligent investigation, conducted with judgment and accuracy, have corrected the errors, and supplied the defects of preceding writers, and have been valuable agents in establishing the use of a remedy in the art of medicine, endued with the most efficacious properties, and admirably calculated to produce great benefit to those cases scientifically selected for its use; and in the contrary cases, or in its

indiscriminate use most serious consequences have arisen, and caused an over degree of prejudice against the use of cold ablution, in fevers, &c.

Indeed, as a topical application, cold water, medicated or not, is capable by its indiscriminate use to local inflamed parts, of doing much harm, as it is of doing good in cases scientifically selected, and appropriately used.

We have not a more simple, and an equally efficacious remedy in the whole list of medical agents, so carelessly used ; or the simple principles so ill understood, to select cases wherein it will be found advantageously used, cold or warm, a mighty difference in *great* simples. Hence the warmth of disputants upon its use, and passiveness of others, who have not particularly attended to either.

In regard to the carelessness of its application, I need only observe, that it is constantly applied in a cold state to an inflamed part, under the bed clothes, or with a considerable covering of linen, or near a good fire ; or used warm with very little linen, or exposed to the common air. As a matter of course, where cold is judicious, it should be applied with one or two foldings of linen, exposed to the air, to favour the evaporation, and thereby increase the cold ; and, when used warm, the contrary principle should be attended to. These palpable errors I continually observe patients committing, even uncorrected by their medical advisers.

Now, in respect to the selection of appropriate cases for its topical application in a cold or warm state, to ease or benefit the patient, the following practical rules will

enable a practitioner to prognosticate, with tolerable certainty, its benign influence ; yet the patient alone will best judge of the comparative merit of the application, which should ever guide the medical attendant in his decision against all other rules. First, consider whether the inflamed part is covered by an elastic or inelastic tissue, and whether the case is a recent attack of inflammation or not ; for instance, if the interior of the gland covered by the tunica albuginæ, a very inelastic tissue, is inflamed, cold application would greatly increase the patient's pain and nausea, by its constringing the skin, cellular substance, and tunica vaginalis, a very elastic tissue, upon a tender and expanding body, during the inflammatory process, and possibly by the blood being repelled also from the surface to the interior, thereby increase the swelling and pain. I say possibly, because it appears to me not so certain a mode of reasoning as it is generally supposed, since constringing the cutaneous vessels would proportionably lessen the egress of the blood in the main supply.

Now, warm water is indicated here to relax the skin, cellular substance, tunica vaginalis, and, by sympathy, the tunica albuginæ, in order that the external pressure thereby be less upon the irritable and expanding gland. The observance of the same principle is admirably successful in cases of inflammation of the interior coats of the eye of the sclerotic coat, an inelastic covering, whilst cold fomentations are equally advantageously used to the tunica conjunctiva and tunica vaginalis, the exterior and elastic coverings of these organs. Here the cold would be advantageous to support the tone of the blood-vessels,



and lessen the inflammatory action, as it would in all other loose tissues and cellular parts.

In cases of inflammation terminating or not in an abscess under the strong fascia of the thigh, leg, or arm, or in any other similarly covered parts, warm fomentation is indicated. Also in luxations of joints, or in bruises of the hands and feet, whilst cold is most advantageous to inflammation of the skin and cellular substance, and to all parts affected with a low degree of inflammation, or what is termed 'chronic,' as well, indeed, as in many other cases after the swelling has overcome the first resistance of fasciæ, &c., sufficiently in proportion to the degree of inflammatory action present.

Cold water is a stimulant, or sedative, according to the manner in which it is used; a sedative, when the body is immersed and retained in cold water, or applied to any part continuedly. Thus parts encircled by ice have been frozen; and there are cases recorded of parts sloughing, and even the patient dying in consequence of the latter effect, which may be brought about by applying heat too suddenly to recover the temperature of the part, thus producing action beyond the strength of the part to endure; hence it dies: a stimulant when suddenly applied against the body in the manner of the shower-bath, or suddenly dashed against local parts of the body. Thus, debilitated muscles are roused into action by the sudden shock of about a pint of spring or iced water, and their tone restored, and morbidly irritable bladder, uterus, skin, &c., are often cured. Cold water thus applied, and hot fomentation, are both sti-

mulants; but the latter relaxes, whilst the former constricts the parts, and when applied either hot or cold in the extremes, cause death on opposite principles; the hot, by exciting vital actions beyond the strength of the parts to continue, and the cold, by lessening vital action beyond its power of re-establishing itself.

Having made these observations upon the general principles upon which cold and hot water should be applied locally, we shall now proceed to the consideration of hot and cold baths, as remedial agents: their successful use must ever depend, like all other agents, upon the circumstances of the case, ever taking care that the strength and action should be kept well proportioned. A striking example of the consequences of the powers and actions not being well proportioned, is seen in the following fact:—

If an animal nearly starved to death, by being long in the cold, is removed suddenly into a warm room, it will soon expire, in consequence of action being excited greater than the strength of the animal can support; but if the animal is put into a cellar, it will recover, or live for some time. A familiar instance of the same effect, is the pain experienced in the fingers and toes, when very cold, and held to the fire.

It is in many cases of the utmost consequence, that you do not increase action beyond the power of the body or of a local part to sustain, which the following, as an example, that I have related elsewhere,\* will amply illustrate.

\* Introductory Lectures to course on Nervous Irritation, Spinal Affections, Distortions, Malformations, &c.

## CASE.

A young lady, about sixteen years old, had a fever of the putrid kind, with ulcers in her throat. Bark had been given her as usual without good effect. Blisters had been applied, and their application was continued long after the period when they could be of any possible service, and they had been dressed with stimulating ointment.

On the day before I saw her she had been put into a warm bath, and after she was taken out she fainted, and was much debilitated. I perceived that the blistered part was sloughing, in consequence of the irritating ointment causing the death of the cellular substance, by the action being excited beyond the vital power of the part to support, thereby adding to the patient's suffering, because the sloughing process always greatly irritates and disturbs the constitution, in addition to their depending upon the fever or any other cause that established it.

The physician who attended the patient wished the stimulating ointment to be continued, to favour the separation of the slough, and the warm bath to lessen the constitutional irritability. I objected to both, and pursued a soothing plan of treatment with success. My reasons were, that the actions produced by the bath and the stimulating dressing would continue, as they had proved to be, more than the vital powers could support.

Temperaments of an individual ought always to be duly considered, when we recommend either a cold or a



warm bath, particularly to a person who is not accustomed to use either, a common circumstance amongst the inhabitants of the united kingdom, nine-tenths of whom never apply water except to their hands and face. However, what they lose in comfort by not availing themselves of that genial and luxurious operation, and possibly in general health, they may regain by judicious use of it as a remedial agent, as a man is in the highest degree a creature of circumstances; indeed, the habits of mankind prove that ablution or non-ablution claim no superior advantages or disadvantages, as even the benefit obtained from either hot or cold baths is rendered only temporary by habitual use. As the healthy may do as they please, we shall confine the following observations on the merits respectively of hot and cold baths for the use of invalids, and the principles upon which they may be advantageously selected and used.

First, we may observe, that the popular prejudice of mixing milk or vinegar in either hot or cold baths, is decidedly objectionable, in as much as both leave a film of mucilage upon the skin, particularly vinegar, consequently it obstructs the natural perspiration of the skin more injuriously than even the neglected natural secretion of the skin. Again, taking strong purgatives before taking baths in the sea or elsewhere, are highly objectionable, because they carry away the strength of the patient, which is so necessary to produce that wholesome re-action by a general glow of heat and vivacity, moral confidence and physical strength,—attendants ever more or less present when cold baths are judiciously used, instead of the following feelings when improperly used—

head-ache, loss of strength, pains in the limbs or back, with a general sense of languor and depression of spirits. In such a case a cold bath, instead of being a gentle stimulant and a wholesome tonic, is exceedingly enervating, if not even dangerous ; and the more so by the popular error that the person should plunge head foremost, in order to prevent a supposed tendency to an accumulation of blood in the brain, although a healthy person may do so harmlessly or advantageously ; yet to a delicate person, of a nervous temperament, whose powers of re-action are weak, it may be followed by serious consequences, as syncope and death. Before a cold bath is taken, the strength of the invalid should be well judged, whether it is sufficient to produce that reaction or glowing warmth, without which it must ever prove injurious. The temperament is also of great consequence ; for we seldom find that the hypochondriac and biliary temperaments are benefited by cold baths, in consequence of the prevailing rigidity of their solids ; indeed, it is generally injurious, particularly when there exists biliary disturbances : such persons are decidedly benefited more by the use of a warm bath. Napoleon, after great and continued excited application on the field of battle, or in the cabinet, with little or no sleep, used to say that he derived all the advantage of a night's rest from a warm bath for an hour or two. I can readily conceive he did, being of a bilious temperament. Hence we may account for his extraordinary active **and** continued exertions.

The cold bath may be said to be serviceable to those who are suffering from dyspepsia, induced by the enervating modes of life peculiar to the inhabitants of great

towns ; and the most appropriate period for the operation to such invalids, appears to be about two hours after breakfast, the stimulus of which will favour re-action, that probably would fail after the operation before breakfast, or the operation of an active dose of aperient medicine.

The patient should take care not to be heated by exercise, or be cold from waiting on the edge of the water, in summoning courage for immersion ; to go in feeling cold or chilly is highly injudicious and often dangerous, from the rigors and fever that may follow,—a danger not to be apprehended when the patient bathes warm.

An invalid should remain but two or three minutes in water, taking care that the body should generally be well immersed. He should refrain from bathing oftener than alternate days, until he finds his strength so much increased as to allow him, without risk of feeling languid, to indulge in it daily.

Experience has suggested the propriety of invalids commencing either with a tepid bath of ninety degrees Fahrenheit, decreasing six or seven degrees each time to sixty-five, or the temperature of the atmosphere at the time. The body should be well rubbed by an attendant with a coarse towel.

In conclusion, I am disposed to observe, that although doubtless the simplest form of cleansing the skin of a person is by a cold water bath, yet its cleansing effects are inferior to those of the warm bath ; and during a large portion of the year, cold bath is not only ungrateful to the feelings in our climate but of a very doubtful advantage to those constitutions a city life has rendered the reverse



of robust ; therefore I give the preference to a warm bath, for the important purpose of purifying the body ; and I would have every parish compelled by an act of parliament to provide warm bath stations in all the poorer districts of manufacturing towns, where the artisans reside, who are in the most need of such convenience. In such districts, the expense would be very inconsiderable, since there are numerous steam-engines, the waste warm water of which might be conveyed into convenient recesses for baths. In passing an establishment of this kind, at the east end of Oxford-street, I have observed the poor people carrying hot water from an ample stream pouring from the building into the street ; and, in the cold weather, many poor children may be seen standing in it to warm their naked feet.

The want of baths in this country, for the poor, must be universally regretted, although much water passes uselessly into drains, instead of into baths, to cleanse and preserve the health of the dingy inhabitants of St. Giles's ; which would not only benefit the poor, but also the wealthy, by the prevention of infectious diseases, and thereby a saving to the householders by lessening the poor-rates ; or, indeed, if it should prove a slight addition to the rate, of what consequence can it be when we consider how large a portion of the Divine and moral law relates to our duty to our poor neighbours, and how much uncleanness tends to engender disease, proving the good old adage—"cleanliness is next to godliness."

## WARM BATHS, &amp;c.

Persons whose powers are insufficient to produce reaction, *i.e.*, not sufficient to sustain the shock of cold water, should use warm baths: in such invalids it will generally augment their natural strength and vigour; it will also regulate the important functions of the skin, and thereby promote the digestive powers, by lessening the morbid irritability of the stomach and bowels.

Many persons suppose that the usual effect of a warm bath is relaxing and even dangerous, and always render the individual very susceptible to take cold, and that it is necessary to get immediately into a warm bed, or at least afterwards to keep very warm, and that it can only be used advantageously at certain periods of the day, and never during the cold weather, if obliged to go out afterwards.

From ample personal experience in a state of health and out of health, and amongst patients and friends, I am fully prepared to declare, that all these objections are unfounded and frivolous, and that a warm bath, where commendable, may be used under all these circumstances.

In such cases, then, it is a tonic free from any kind of danger, and may be used with equal advantage at all times of the day, except within an hour after dinner; and during every season, the bather may deliberately dry himself and dress in his usual clothing, and immediately expose himself without any risk of taking cold, in walk-

ing or riding during all weathers, with only a precaution not to occasion fatigue.

In the use of a warm bath, the strength of the patient should be duly considered, as to his power to sustain the stimulus produced by the heat, and be equal to carry on the roused action with advantage as an increased vigour, otherwise its effect will prove serious, as in the case related (page 285.)

If the warm bath does not produce head-ache, sleepiness, or fainting, it is always of service, but seldom of use when the patient's strength is much reduced; and in extreme debilitated cases it may produce fatal effects. Persons of a bilious temperament and hypochondriacal, are in general considerably more benefited by a warm than a cold bath, and when indiscriminately used with a tolerable degree of strength, is infinitely safer and more advantageous.

Warm bathing communicates heat to the system, and likewise stimulates it, and causes, contrary to general impression, more absorption than exhalation, and is justly said to be in the very cases where internal remedies are most prejudicial, the most beneficial.

When we consider the function of the skin and that of the mucous membranes lining the inlets and outlets of the body,—in short, its continuation and their intimate sympathies in their relations to the digestive process, we cannot be surprised that an improvement in that of the skin should confer a corresponding benefit to the others; hence we find that in cases of irritable mucous membranes of the intestines, the warm bath may be considered to be at once a laxative and an astringent.



M. Rapon, in speaking of the effect of vapour-bath in gastro-intestinal membrane, has made the following practical observations which are equally applicable to the use of the warm bath :—" Chronic inflammations of the mucous membrane of the stomach and bowels are frequently confounded with diseases of a very different kind, such as nervous dyspepsia, gastralgia, &c. In cases of the last-mentioned kind, anti-spasmodics, bitters, tonics, &c., will often be beneficial, while they will be extremely injurious in the former, the irritation of the membrane being thereby frequently excited to inflammation, or if this already exists, it will be greatly aggravated. In both classes of cases, the warm bath is at least a safe application, and, with very few exceptions, also a very salutary one."

Count Rumford published an interesting Essay on the subject of Warm Bathing. His views so perfectly coincide with my own experience, that I am induced to transcribe the following observations :—

" A person may gain fresh health, activity, and spirits, by bathing every day at two o'clock in the afternoon, at the temperature of ninety-six or ninety-seven degrees Fahrenheit, and remaining in the bath for half an hour. I am in the habit of recommending from three to six degrees higher."

The Count justly reprobates the idea of any advantage being derived from temperate baths of from fifty to sixty degrees :—

" The animal temperature," he observes, " is ninety-eight degrees, therefore, in those temperate baths, we lie motionless in a temperature inferior to that of our own

bodies, and consequently must lose instead of acquiring heat, or even retaining that which we possess.”

### STEAM BATHS.

Practically, I have but little to offer respecting this mode of using heated fluid as a remedial agent, because the convenience for its application is not so general as that of a warm bath ; there can, however, be no doubt that a steam bath may be used with the same advantage as a warm bath ; but I observe that persons who use steam baths often conceive that perspiration is induced more freely by steam than by warm water, misapprehending the condensed vapour, into large drops resting and trickling over their persons, to be the effect of cutaneous secretion. The skin very probably secretes less perspiration than follows the use of warm bath, because the living body has the power of resisting heat and condensing vapour into an apparent perspiration. Dr. Salander's experiments confirm this fact. He procured a suite of rooms and remained in them heated, until a steak near him was cooked. He observed also that the temperature a certain distance from his person, to be considerably higher than it was immediately in contact with his person. Hence the steam was condensed on his body from the comparative coldness of it.

The same principle explains to us why a fresh egg will take a longer time to boil or to freeze than a stale or dead one ; and again, why the leaves, for instance, of a vine facing the sun on a wall will be cool, whilst its

dead leaves will be as warm as the material they are supported upon.

The intrepid traveller and philosopher also first proved in this country that a sudden transition of temperature from heat to cold may be harmless, for he ran out after the steak was cooked without any covering, and rolled himself in the snow !

The reader will observe that the effect here was to diminish vital action, and not to increase action upon a diminished vital power, as noticed already.

The Russians have for ages been in the habit of using steam baths. Each town and village has its public steam baths, which is a kind of amphitheatre, surrounded with steps, having in the middle a pile of stones, made quite hot by a fire underneath, upon which they throw water, that of course rises in hot steam, and fills the building.

Men and women, divested of their clothes, ascend the steps, to suit themselves with the requisite heat agreeable to themselves, and by means of a broom-fan suspended near the ceiling where the heat is necessarily most, they strike one another with heated twigs, and afterwards jump into cold water, or roll themselves in snow, or take a bucket full of cold water and pour it upon their heads, and rub themselves dry afterwards !

#### COLD SHOWER BATHS.

A cold shower-bath is more transient in its effects than the cold bath, and prevents a common error with



invalids of over-delaying their exit ; and, like other baths, it is regarded as a more useful remedy in some temperaments, or appropriate cases, particularly in sanguineous and nervous temperaments, with affection of the mucous membranes of the stomach, intestinal and bronchial tubes ; indeed, in all mucous membranes which necessarily must be the linings of all cysts, tubes, or organs in contact with the air. The tonic effects of the shower-bath are communicated to a debilitated stomach, or an irritable organ from disease or oversensibility. Hence it is an antidote against a relapse of disease. It may be used daily, or even twice a day, the shock being more sudden, and the immediate effects less permanent, thereby offering, in delicate constitutions, certain advantages over a cold bath.

Notwithstanding the admitted advantages of cold shower-baths, and their being supposed to be more efficacious in certain diseases than baths of less partial application, still they are not, in debilitated cases, unattended, any more than cold baths, with dreaded effects, as venous congestion in the brain, even to cause death, in addition to those ill effects noticed under the head of cold baths ; consequently, in delicate cases, I have invariably recommended the temperature of the water to be raised to eighty or ninety degrees, to begin with, gradually reducing the heat four or five degrees daily, until lowered to that of the atmosphere at the time.

I consider it of great importance to direct debilitated patients, particularly elderly people, or those who are so in constitution, to have their heads covered with an oil-

skin cap, or two cotton night-caps, and to have their feet resting in a pan of warm water. By these precautions, patients may derive advantage from their use.

The best time for using this bath is similar to that of a cold bath, about two or three hours after breakfast. Shower-baths are recommended in similar cases as the cold baths ; but being milder and more transient in their effects, they may be used where the former would be too great a shock. Shower-baths are used much oftener than a cold or plunging bath, because they absorb less heat, consequently the powers of nature are but slightly exhausted, and the call for re-action which follows to recover the equanimity of heat, is advantageously supplied to the system by aid of the stimulus of the shock.

#### MEDICATED BATHS.

Medicated baths are not much used in this country, although much more of late than formerly, particularly for cutaneous affections, and certainly, when judiciously selected for particular cases, with much advantage.

Many interesting cases I could adduce, did the limits of my present work admit of them ; however, I may here state, that I have found alkaline baths most useful when the skin is hot and dry, with or without other febrile symptoms depending upon the state of the stomach or bowels ; and for adults, when arising from any cause affecting the mucous membranes, and particularly from excessive indulgence in wine or other stimulants after dinner, about a drachm of the liquor potassæ to each

gallon of warm water, forming the bath of ninety-eight degrees, will be of infinite use in correcting or neutralizing that excess of acid which ever accompanies a hot, dry skin, either from fever, indigestion, with heart-burn, excess of wine, &c., and, for infants, rather less than half a drachm to each gallon will be sufficient.

This mode of throwing alkaline occasionally into the system of very young infants during dentition, is in my opinion far superior to its administration in any other way, as the following will illustrate :—

#### CASE.

Mrs. M.'s child, six months old, began about two or three weeks before I was consulted to vomit its food, and was frequently purged. His countenance was sallow, his skin hot and dry, breath sour; his motions were either too light a colour, or green; urine too high coloured, as is usual in all cases with this state of the skin, depositing, when left, a brown sediment of uric acid.

#### TREATMENT.

The child had been given, by the advice of the family medical attendant, chalk and mercury-powder, chalk mixture, magnesia, &c. Still the symptoms remained, which had now greatly reduced the baby from a fine child to little more than shrivelled skin and bone. The use of a drachm of the solution of potash to about



two gallons of warm water, of ninety-eight degrees, twice the first day, and once on the second and third day, and afterwards on alternate days, soon stopped his sickness and purging, and restored his health in a few days.

Cases of various kinds of fever, indigestion, and bilious affection, are likewise greatly benefited, particularly subjects of bilious temperaments and of gouty habits, where the stomach is too irritable to retain medicine.

In cases of moist, clammy skin, in which the urine deposits a light cloudy sediment (*phosphoric acid*), arising from local or general causes, influencing, in a debilitating manner, the digestive organs, and thereby, more or less, the whole system, it is of use.

I have also found more advantage from the absorbents of the skin taking up sulphuric or nitric acid diluted, in proportion of two or three drachms to each gallon of water, at ninety-eight degrees, than from the usual manner of administering them. Indeed, in irritable or ulcerated bowels, it is, in my opinion, the only legitimate mode of administering it, because swallowing it, however diluted and combined, may produce purging that may carry off the remaining strength of the patient; his only chance of recovery, or at least seriously to prolong his illness, which may be avoided by thus administering the acids.

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GENERAL RULES TO BE OBSERVED IN BATHING  
CHILDREN.

It is admitted, that the most suitable temperature for baths, in a remedial point of view, is between ninety and ninety-eight degrees of Fahrenheit. As a dietetic habit, baths for children upwards of twelve months need not be particularly regulated. The tepid bath is preferable in winter, the cool bath, (of the temperature of the river water,) in the hottest days of summer.

Infants should not be put into a bath just after suckling, or awaking; and children should only use it two hours after breakfast or dinner, when they are not heated by exercise, or chilled by inactivity. Infants under five weeks old, should at first only remain in a bath about three minutes, and afterwards gradually extending the period from five to fifteen or twenty minutes. In all cases, the child's body should be immersed up to the neck, in order that it may not be partially exposed to the heat of the water, or the cold air, as would be the case if the body was immersed up to the chest only, for evident reason of discomfort, and the liability of taking cold.

On immersion, the child should be well rubbed and dried all over, and placed in bed lightly covered with clothing, in order that perspiration may not be unduly favoured or excited.

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## ON THE USE OF ENEMATA, OR CLYSTERS.

It is a matter of surprise to foreigners, that a mode of administering medicines so ancient, and so common in other countries, should be comparatively rare in England. While people of other nations make use of enemata as a wholesome operation, or at any rate independently of any real ailment, many practitioners in this country frequently allow a patient who cannot keep anything on his stomach to suffer agonizing suspense before they will order for his relief a remedy of the most obvious and salutary kind, and I may add, many patients whose fastidiousness and obstinacy causes them to reject their use.

No mode of exhibiting medicines can be more comprehensive than clysters; they embrace almost every article of the *Materia Medica*, as well as of aliment, whose virtues can be imparted to a liquid; besides this, no great nicety is necessary in their preparation: which is an essential advantage, when we consider the adulteration, and the change or loss of virtue which medicines of importance too frequently undergo, and sometimes injudiciously mixed, in order to accommodate a squeamish palate, or, what is still worse, a capricious patient. But the great advantage of thus administering medicine, appears in cases wherein, from the excessive irritability of the stomach, nothing can be retained on it. This is not only the case in severe diseases, which have brought the patient very low, but in many others in an incipient state: or, from its natural irritability, circum-



stances that every practitioner of experience has often observed.

In irritation of the stomach and bowels, I have been astonished at the sudden and happy changes effected by clysters. There are, indeed, few cases in which clysters of some sort are contra-indicated. The eminent superiority they claim is chiefly on the score of their innocent operation. In cases where they do no good, they seldom do any harm, unless their composition be absolutely poisonous.

In obstinate colics, clysters of a laxative and antispasmodic nature, frequently effected a salutary evacuation, after all other means had failed.

Dr. Wilson has lately treated all cases of *colica pictorum*, or painters' colic, at the Middlesex Hospital, by injecting a large quantity of warm water into the rectum, whilst the patient was in a warm bath. The Doctor directed the patient to use the injecting pump until he felt the belly distend; after which the bowels were relieved, more or less copiously, two or three times of hardened *scybelæ*; the bowels resumed their natural function, and the patient was cured of his horrid pains and dangerous condition.

I have no doubt that this plan of Dr. Wilson's will entirely supersede the old and often inefficient and dangerous plan of administering drastic purgatives, not only in cases of *colica pictorum*, but in all other forms of colic, accompanied by constipation of the bowels, with or without pain, provided there is no inflammation of the bowels, or of the coverings wherein distention of the bowels would be injurious; and even in cases of

strangulated hernia, the treatment may be conceived to be feasible, and, in my opinion, much more harmless than ill-directed taxis, or unduly persevered in with force; air has been injected in various instances, with success, after taxis had failed, and it is highly commended by practical men.

#### CASE.

Since writing the above I was, on the 26th of March, 1842, requested to visit Miss —, an hysterical patient, whose bowels had been confined for six days. Her medical attendant had administered various purgatives, and had ordered clisters containing half-a-pint of gruel and salts every four hours, all, however, without success; I, therefore, was sent for, to consult with the medical gentleman, who had been disappointed by the usual mode of treating the case.

#### TREATMENT.

I recommended that the patient should be placed in a warm bath of ninety-eight degrees, and, at the same time, to have the water of her bath injected into the rectum by an injecting-pump, until the bowels were tolerably distended. Thus, in less than a quarter of an hour, the bowels were quickly and copiously relieved.

In cases of asthma, gout, and head-ache, quick relief

has followed the use of enemata, particularly when the skin is hot and dry, with distended bowels, oppressed breathing, and a sense of pressure, like a girth, over the chest; also in affections of the bladder, and in suppression of the urine from spasm, or painful micturition, or partially obstructed or painful menstruation.

In obstinate intermittent fever, an injection of strong decoction of bark has often saved a patient, when nothing could be retained upon the stomach. In simple fevers, arising from indigestion or dentition in children, I have known a hot dry skin and thirst to be removed by cold water injections.

It was observed formerly by English practitioners, that the French were particularly successful in treating disorders of hot climates in the French islands of the West Indies; and from inquiries it was ascertained that their success was principally to be ascribed to this mode of administering medicines.

From the most inconsiderable head-ache to a sanguineous apoplexy, the French prescribe enemata; and, indeed, for almost every indisposition, *un lavement* is sure to be recommended.

Those practitioners conceived that most complaints originated in some intestinal obstruction, and that clysters were their naturul cleansers, as the word imports.

Viewed as a mode of administering sustenance, cases abound in which patients have been kept alive for weeks by nourishing clysters, when aliment could not be swallowed or retained on the stomach. It is well known that medicines thus administered will have their usual effect.

Certainly, where aperient medicine is necessary, in-



stead of swallowing nauseous draughts and pills, to excite peristaltic action of the bowels, an injection of a pint or two of warm or cold water, is far more agreeable, simple, and more effective to solve a mass, which often in elderly people, and particularly women, becomes so solid and impacted, designated scybala, that no other means by medicine will remove ; hence continual headaches. Scybala, or hardened mass, will resist water, and aperient salts injection ; but half or an ounce of oil of turpentine injected, with a pint of water, twice or thrice a week, seldom fail to relieve the patient.

If the bladder become in consequence of it incapable of discharging its contents, or irritated and frequent desires to relieve itself, a little gum arabic swallowed, dissolved in water, will suffice to remedy those temporary inconveniences.

I am fully satisfied that the large intestines fail to perform their healthy functions much oftener than the small intestines do. Scybalæ are found in the almost inert cells of the colon, exciting irritation of the bladder, urethra, prostrate gland, and uterus, swelled legs, oppressed breathing, head ache, &c. When scybalæ are once formed, to impact and extend the colon, the continued unnatural dilated condition of the muscular coat of the intestine soon render its fibres too debilitated to contract with sufficient power to expel the contents. To excite sufficient action of the colon to do so, I have found that all purgatives fail, except turpentine, with the aid of friction to the spine and abdomen, indeed friction alone will often be sufficient to excite action of the bowels, when depending upon simple torpid action

of the bowels, and occasionally stimulating liniments will be necessary to effect the desired function of the intestines.

The rectum is occasionally impacted in elderly people, particularly in females, and so much distended as to occupy injuriously the pelvis, and seriously interfering with the functions of the pelvic organs, requiring instrumental aid to dislodge it.

It is supposed that a costive habit is the consequence of the absorbent taking up too quickly the mucous fluid secreted by the intestinal glands, for the purpose of a more ready passage of the residue of food, or the consequences of not a sufficient mucous secretion. It is, however, more probable that the torpid intestinal action depends upon insufficient energy of the spinal nerves, thus favouring impaction in the cells of the large intestines.

It is, however, not intended to imply that a costive habit is attended invariably with impaction of the colon cells, or that inconvenience or injurious effects follow; because I am well acquainted with persons, and even mothers of large families, who enjoy excellent health, although their bowels are only relieved once in five or seven days. These persons inherit their peculiarity from either of their parents. It would, of course, be highly imprudent to interfere with the natural habits of such persons, by administering aperient medicines; nothing could justify the administration of purgatives but some dereliction from the natural sensations of the person, or evidence by inconvenient symptoms.

The use of aperient medicines may frequently be super-

seded by merely soliciting nature daily, at some convenient hour, thus, in three or four weeks, the force of habit will bring the action of the bowels to be regular. This is a fact generally known, and equally neglected. Possibly much of the advantage of the habitual use of lavements may be attributed to this circumstance; be it so, it is a harmless trouble, and anything is better than the injudicious, and often injurious use of nauseating pills and potions to effect the purpose.

THE END.



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